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A NEW

# SYSTEM OF MIDWIFERY,

IN FOUR PARTS;

FOUNDED ON

PRACTICAL OBSERVATIONS.

THE WHOLE

ILLUSTRATED WITH COPPER PLATES.

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By ROBERT WALLACE JOHNSON, M. D.

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THE SECOND EDITION,

WITH ADDITIONS.

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BRENTFORD:

PRINTED FOR THE AUTHOR, BY P. NORBURY;

AND SOLD BY J. JOHNSON, ST. PAUL'S CHURCH-YARD;

R. BALDWIN, PATER-NOSTER-ROW;

AND G. NICOL AND T. CADELL, STRAND, LONDON.

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M.DCC.LXXXVI.

MVSEVM
BRITAN
NICVM

TO

# JOHN HUNTER, Esq.

FELLOW OF THE ROYAL SOCIETIES OF LONDON AND GOTTENBURGH,

OF

THE ROYAL MEDICAL SOCIETY;

THE

ROYAL ACADEMY OF SURGEONS,

AT PARIS:

AND

SURGEON EXTRAORDINARY TO HIS MAJESTY.

SIR,

Permit me to inſcribe this Edition of my MIDWIFERY to you alone, as one of the moſt public teſtimonies, which I can give, of the grateful ſenſe I retain, of your ſteady friendſhip to me, ever ſince the firſt of our acquaintance in the year 1750. My other good friends, to whom, with yourſelf, the firſt impreſſion of it was dedicated, are gone hence. Thanks to God! You ſtill live to improve medical knowledge. I am fully convinced from many circumſtances that your unbounded attention to this ſubject, depends not on lucrative motives; but ſingly a deſire of doing good to mankind. Proceed, and may you proſper!

prosper! your memory will be revered (I presume, with gratitude) through ages to come! whereas, that of others, who have gained titles or honours, either by party interest, or by gold, will lie buried in oblivion. That you may enjoy good health and long life, and remain a blessing to your family and friends, as well as to the public, are, dear Sir, the very ardent wishes of

YOUR MOST SINCERE FRIEND,

AND MOST HUMBLE SERVANT,

BRENTFORD BUTTS,
OCTOBER, 1786.

ROBERT WALLACE JOHNSON.

# PREFACE.

THOUGH great improvements have been made during the laſt two centuries, in almoſt ever yart and ſcience; yet, if the learned reader but reflects on the very ſlow progreſs made in them before, even from the moſt early accounts of time, the leſs will he be diſappointed, ſhould the contents of the following work not come entirely up to his expectation.

Paying ſome attention to only Midwifery, it may aſtoniſh him to find, how long ſo important and very ancient a branch of Phyſic, was confined in the hands of female practitioners; and he muſt have an adamantine heart indeed, if he does not lament the unhappy fate of millions of women and children, during that time, loſt, for want of proper help. It is a bleſſing however to mankind, that this part of phyſic is now placed in the hands of both ſexes, each properly inſtructed for undertaking their reſpective departments in the practice.

To the French, I think, we are obliged for this great deliverance; it appearing, that midwifery was firſt reſcued from its ſtate of bondage by ſome eminent ſurgeons of that nation.* Several obſtetric practitioners in Holland and England, gave their aſſiſtance ſoon afterwards: But none ſo effectually as the late eminent Dr. Smellie. By him its theory and practice were ſo greatly improved, as to render it very difficult to advance any farther. No wonder therefore ſhould it be thought by ſome, aſſuming in me to attempt this work. I have found it indeed a very arduous taſk: But an anxious deſire of being uſeful in my day, inclined me to proceed. I have a notion, that there are but very few books (if any) without faults; ſome defects no doubt may be found in this: But, if the critic will be ſo good as to adviſe me how to mend them properly, it will give me the higheſt pleaſure to

 acknowledge

* See my introduction to Part III.

acknowledge the favour, if I live to publiſh another edition. Should I not be ſo happy, it is nevertheleſs my ardent wiſh, that ſome experienced practitioner may perfect my deſign to the public good.

With regard to its arrangement, I have ſtill thought it beſt to give firſt the deſcriptions, dimenſions, and repreſentations of ſuch parts of the body, as are abſolutely neceſſary to be well underſtood, and kept always in mind by the ſtudent, before and after he attempts the practice. Though the ſubject from which theſe deſcriptions, &c. were taken, was prepared by my friend Mr. Hunter, exactly to my directions, yet, as the fleſhy parts in a dead ſtate fall down, and alter from what they are whilſt alive, I judged it neceſſary to delineate ſome of them, as near as I could to their natural poſition and ſize, as may be ſeen in plates third and tenth. I was enabled to effect thoſe from ideas obtained in practice; ſo that I have reaſon to believe, that the operator cannot be deceived, either in the dimenſions or appearances.

I have next treated of ſome particulars reſpecting mother and child, that ſeem naturally connected with the ſubject, and ought alſo to be rightly underſtood prior to the operative part; then of parturition, natural, difficult, &c. and laſtly, of ſome diſorders which women are liable to after child bearing; nearly in the ſame order with Dr. Smellie.

Since my firſt edition, the world is obliged to ſeveral gentlemen who have wrote on different parts of this ſubject, particularly Dr. Hulme, and the ingenious Mr. White. Such of thoſe writings as have come to my knowledge, and have appeared to me new and important, I have quoted, as may be ſeen hereafter. In all other parts of the work, where no author is mentioned, what is advanced is from practical knowledge, and was moſtly written in the patient's chamber.

Whereever my obſervations coincide with thoſe of any other author, let them ſerve to confirm the truth of his doctrine. I have paid much attention to diſcover how far nature might be allowed to act of herſelf, without in-

jury

jury to mother or child, eſpecially in difficult parturition; and to know ſuch times and circumſtances as demanded the immediate aſſiſtance of art. Happy am I now to find, not only by my own further experience, but by the teſtimony of many judicious practitioners, that the eſſentials of the practice which I recommended, are not ill founded. In reſpect to two points, I have heard it remarked, firſt, that the introduction to part III. is not in order, by not being placed at the begining of the work; and ſecondly, that if the work had been printed in octavo, it would have ſuited the convenience of ſtudents better. My reaſon for placing the introduction as I did, and where I ſtill judge it fitteſt to be, was to bring forward, in one connected view, immediately antecedent to the operative part, ſuch progreſs as had been made in the art, to enable the reader better to diſtinguiſh between that, and what is offered in the preſent work; and to direct him alſo to the right path for making farther diſcoveries. As to the other obſervation, I ſhould have been glad to have reduced the price, by compriſing the whole ſubject matter in one octavo volume, were I not certain, that the plates, and other parts of the work, muſt be ſo much leſſened and abridged, as to render them not ſo uſeful as I wiſhed: But to return,

This work being publiſhed in 1769, I was in hopes by this time to have ſeen the operative part of midwifery more improved, as there are many teachers of it in London, ſtill recommending ſomething of their own as new to their pupils. If their diſcoveries had appeared to me real improvements, I ſhould have been forward now to have adopted them; but as they do not, I hope I ſhall be excuſed for abiding by the practice herein recommended. Whether their attempts at improvements or mine be beſt founded, let the teſt of time determine: the general good is to be preferred.

With reſpect to my inſtruments, I have made a little alteration in the forceps, in not covering their joint and handle, and ſtrenthening a little the ſhank or handle of the embryulcus. One reaſon, perhaps, of their not being in more general uſe, may be owing to the difficulty found in making them right; for I muſt ſtill own, that I never could get them made perfect, unleſs, under my own inſpection, by Mr. Lane, of this Town.

As

As to cancers in the uterus, I wiſhed to have had the opportunity of enlarging more on that ſubject, but what I have already advanced muſt ſuffice for the preſent. I think however, a particular regard ought to be paid to the two caſes related in Part IV. Chap. XI. The ſubjects of which are ſtill living evidences of perfect cures. In addition to the above caſes, I may obſerve, that Mr. Corſon, Surgeon and Man-Midwife of this town, lately attended a patient with ſymptoms of an approaching cancer in the uterus. He injected in the manner, and uſed other means ſimilar to thoſe I have mentioned; the patient is at this time entirely free from her complaints.

By way of appendix, I have added two letters (out of many I have been honoured with on the ſubject) of the late Dr. Redman, of Philadelphia, with their anſwer; as they may ſerve farther to explain and illuſtrate in ſome degree what I have advanced in the work; as alſo, with a deſign to do juſtice to the memory of a moſt valuable member of ſociety, whoſe philanthropy may be ſeen in the tenor of his letters.

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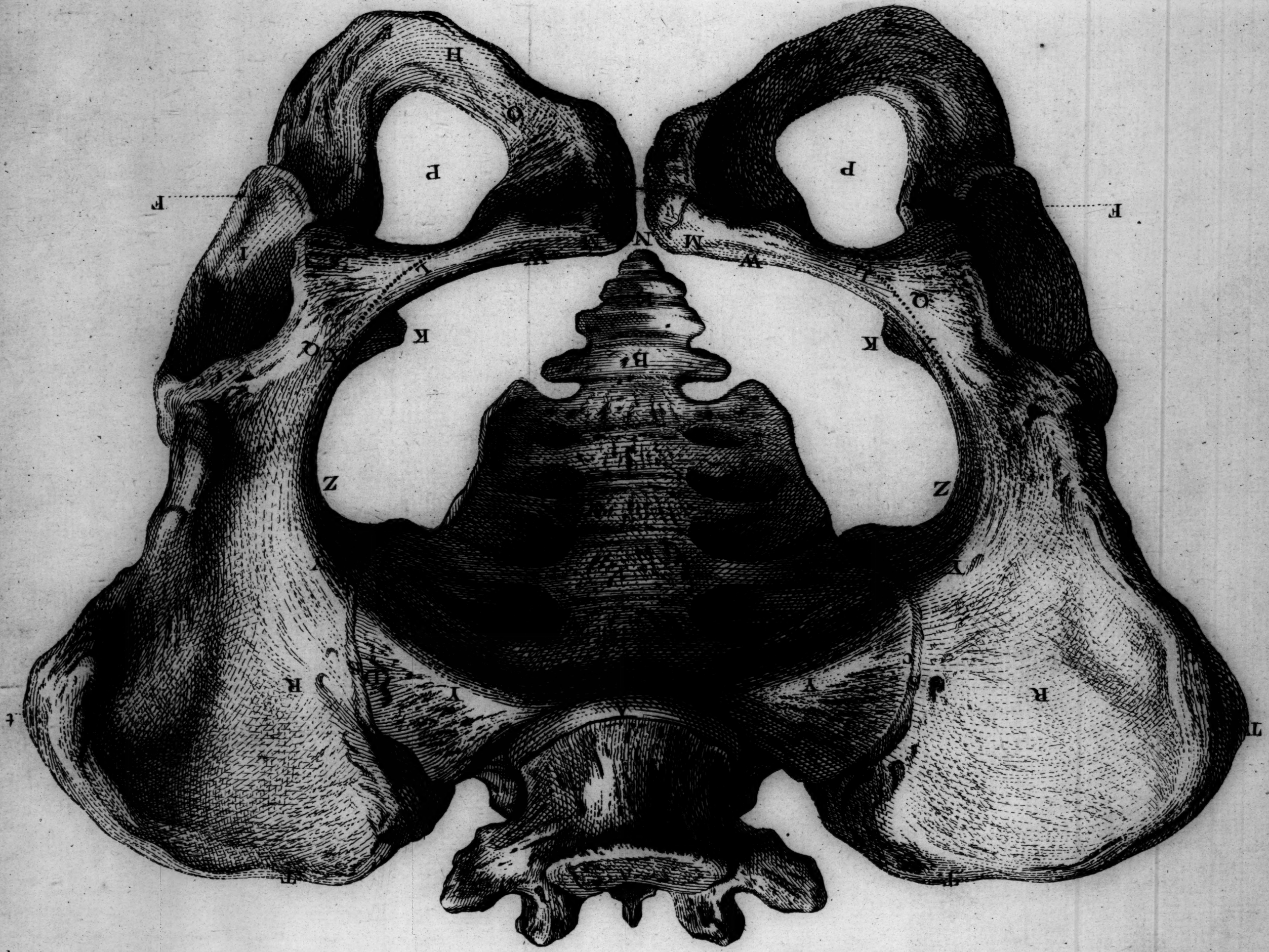
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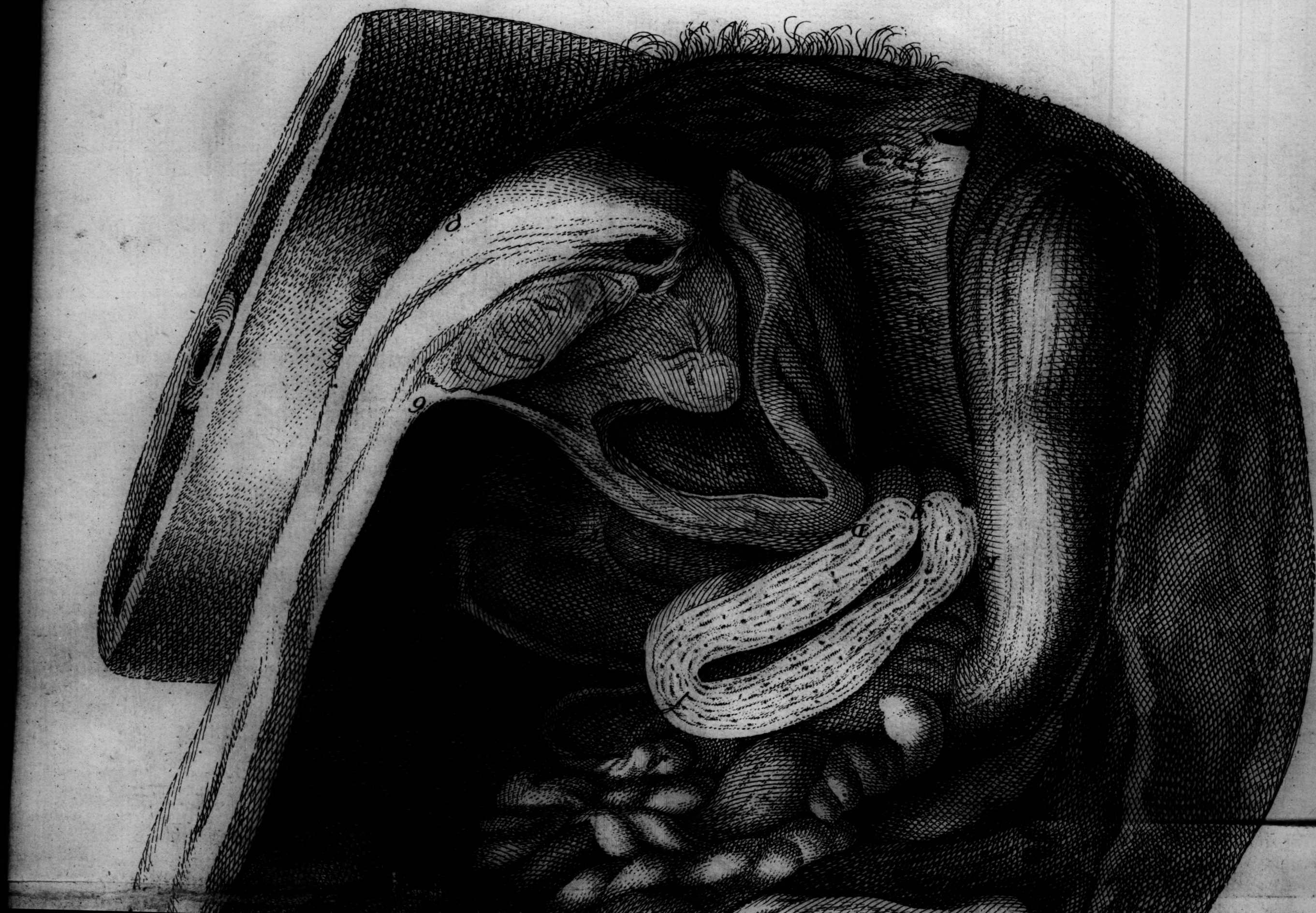
Plate 2



A NEW

# SYSTEM OF MIDWIFERY.

## PART I.

### CHAP. I.

### OF THE BONES WHICH CONSTITUTE THE LUMBAL SPINE, AND THE PELVIS.

THE bones which form the abdomen, are thoſe of the pelvis below, five lumbal vertebræ behind, five falſe and one true rib of each ſide (principally their anterior ends) above; and the inferior end of the appendix enſiformis, which makes the anterior ſuperior point of its cavity.

§. II. The abdominal ſpine (that of the pelvis included) reckoning from below, is made up of the os coccygis A, os ſacrum B C, and five vertebræ lumborum E, F, g, H, I. That part of the ſpine which Abdominal ſpine. Plate III.

is formed by the vertebræ, bends forwards with a prominent convexity; and its loweſt vertebra at D, being articulated with the ſuperior end of the os ſacrum C, forms an angle D, called the great angle of the os ſacrum, which in ſome bodies is very ſharp, and projects, in a conſiderable degree, over the brim of the pelvis.

Great angle of os ſacrum.

§. III. Immediately below this great angle, the os ſacrum recedes back for ſeveral inches, ſo as to be nearly horizontal when the body is perpendicular; then making a bend downwards, it forms an obtuſe angle at B, called the little angle of the os ſacrum; and immediately below this angle, it articulates with the ſuperior end of the os coccygis.

The os coccygis continues its courſe directly downwards, then forwards, and ends in a ſmall apex at A, which terminates the ſpine below.

Os ſacrum. Plate I.

§. IV. The os ſacrum which forms the ſuperior poſterior ſide of the pelvis, is uſually about four inches long from A to B, three inches broad at the ſuperior end C D, and leſs than two at the inferior end B. Its concave or anterior ſide is uſually ſmooth, but the poſterior convex ſide has many prominencies which are filled up, and covered with the muſcular and tendinous parts behind.

Os coccygis. Plate III.

§. V. The os coccygis E, which forms the inferior poſterior part of the pelvis, is uſually about three inches long, or thereabouts; is broadeſt at its articulation with the os ſacrum, and from thence it grows gradually narrower to the apex, where it terminates as ſmall as the end of one's little finger. It conſiſts of four bones, 1, 2, 3, 4, whoſe articulations admit of ſuch motion as to recede a little back as the child paſſes through the pelvis.

§. VI.

§. VI. The pelvis is made up of the two laſt deſcribed bones, and the two oſſa innominata. Each os innominatum in children makes three diſtinct bones, called os pubis, ilium and iſchium; but, in the adult ſtate, they are ſo firmly united as to make but one, whoſe portions ſtill retaining their names, ſhall be deſcribed accordingly. Pelvis.

§. VII. The inferior portion of the os innominatum called iſchium, is uſually diſtinguiſhed by the body F, tuberoſity G, and ramus H. It is joined to the os ilium above, and os pubis before, making the middle and inferior part of each ſide of the pelvis. The body externally forms the loweſt and greateſt part of the acetabulum I, and ſends an apophyſes K backwards, called the ſpine of the iſchium. The tuberoſity G being downwards, makes the inferior part of the whole trunk, it being that part on which the body reſts, when we ſit. The ramus H, is a thin apophyſes, which ariſing from the inferior part of the tuberoſity, paſſes forwards and upwards, till it joins the ramus of the os pubis, and forms the foramen magnum iſchii. Os iſchium. Plate I.

§. VIII. The anterior portion of the os innominatum called os pubis, is the leaſt of the three, and is uſually diſtinguiſhed by the body, angle, and ramus. The body L, being the outer part, joins to the os ilium; the angle M, being the anterior and inner part, joins the angle of that of the other ſide; and forms, by a thick cartilaginous ſubſtance, what is called the ſymphyſes N of the pubis. The ramus O, is a thin apophyſes, which ariſing from its inferior edge, near to the ſymphyſes, paſſes downwards, outwards, and backwards, and joins below to the ramus H of the os iſchium. By this juncture of thoſe two branches, is formed a large hole P, called the foramen magnum iſchii, as mentioned before. Os pubis. Symphyſes of the pubis.

Os ilium.

§ IX. The ſuperior portion Q R of each os innominatum, called os ilium, is articulated behind to the edge of the os ſacrum C D, near to its great angle, by a firm cartilaginous ſubſtance S, and is united to the os pubis before, and to the os iſchium below.

The ſuperior part R of this bone is thin, and the edge T T, riſing up like an arch, and flying or turning outwards, makes the upper part of the pelvis, when viewed together, to reſemble ſomewhat the wings of a phaeton. This ſuperior edge is called the criſta.

Brim of the pelvis.

§. X. Upon the inner ſuperior edge of each os pubis there riſes a ridge, or ſpine W, which, paſſing from the ſymphyſis N, obliquely upwards and backwards, joins another ſpine X, formed on the inner ſurface of the inferior part of the iſchium, which, running alſo backwards and upwards, joins to the os ſacrum at Y, a little below the great angle. This ridge or ſpine W X Y Y, when covered with the fleſhy parts, muſt be underſtood in the following work to be the brim of the pelvis.

Alæ, or wings of the pelvis.

§. XI. The ſuperior part of each os ilium, immediately above the ridge or ſpine deſcribed in laſt ſection, flies obliquely outwards, in reſemblance of a wing, as obſerved in §. VII. This ala or wing of each os ilium is in breadth from the brim at Y, to the criſta at T, two and an half inches; ſometimes a little more.

## CHAP. II.

### OF THE ABDOMINAL CAVITY, PSOÆ-MUSCLES, POPARTS LIGAMENTS, PERITONÆUM, BLADDER, AND RECTUM.

THE fleſhy parts, which conſtitute the abdominal cavity, are theſe following: Above, the diaphragm; before, and on each ſide, the muſculi obliqui aſcendentes, deſcendentes, tranſverſales, and rectus abdominis; below, poparts ligaments, pſoæ, quadrati lumbarum, iliaci, glutæi, ligamenta ſacro-ſciatica, muſculi coccygæi, levator and ſphinctor ani, crus and erector clitoridis, and ſphinctor vaginæ. Conſtituent parts.

It is covered externally with the common integuments, and lined within by the peritonæum. As a deſcription of each of theſe parts here would be more tedious than uſeful, I ſhall only take notice of the pſoæ, poparts ligaments, and the peritonæum.

§. II. The pſoæ-muſcles take their origin chiefly from the laſt vertebra dorſi, and the four ſuperior of the loins; then paſſing from each ſide of the ſpine, a little above and behind the great angle, they run obliquely outwards and downwards upon the brim of the pelvis, till at its wideſt part they paſs under the ſuperior or outer ends of poparts ligaments, making there what is called their decuſſations, or angles, with thoſe ligaments; and then paſſing over the ilia, near to their junctures with the oſſa pubis, they are chiefly at laſt inſerted into the little tuberoſities of the oſſa femorum. Pſoæ-muſcles.

§. III.

Os ilium. § IX. The ſuperior portion Q R of each os innominatum, called os ilium, is articulated behind to the edge of the os ſacrum C D, near to its great angle, by a firm cartilaginous ſubſtance S, and is united to the os pubis before, and to the os iſchium below.

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§. III.

Obſervation. §. III. Theſe muſcles, being of a thick, round and conic form, and lying upon the inner edges of thoſe which immediately cover the alæ, namely, the iliaci interni, form a deep cavity on each ala, above three inches in length and two in breadth. As they lie thus upon the inner edge of thoſe muſcles, near one half of their diameters projects inwards over the brim of the pelvis.

Hence, when the child's head preſents right, at the birth, to the centre of the pelvis, theſe muſcles will move outwards till they become equal to the boney brim, and thereby cauſe no obſtruction: but if the vertex, or crown, ſhould happen to hitch on the outer ſide of either of them, they will then fly inwards, the vertex conſequently ſlide outwards into the cavity on the ala, by which poſition the head will fall acroſs the brim of the pelvis, and the birth be obſtructed.

Poparts ligaments. §. IV. Poparts ligaments cover the anterior part of the brim of the pelvis. Their courſe is from the anterior tuberoſity of each os ilium to the ſymphyſes of the pubis; and they are formed by the union of the tendinous fibres of the muſculi obliqui deſcendentes abdominis, in manner following:

The third digitation of thoſe muſcles (reckoning upwards) run downwards; and, in part, are inſerted into the anterior tuberoſity of the oſſa iliaca. The remaining portions fly off from theſe tuberoſities forwards and downwards, and are inſerted into the ſuperior edge of each os pubis, near to the ſymphyſes. In this courſe the tendinous fibres of the third digitations are joined by thoſe of the fourth digitations, in a gradual manner as they deſcend; forming a ſtrong ligamentous ſubſtance.

Peritonæum. §. V. The peritonæum is a ſtrong membrane, which is very ſmooth on the inner ſurface; namely, that ſide which makes the inner ſur-

face of the abdominal cavity. Its outer ſurface is covered with a fibrous ſubſtance, called its external portion, which connects it to the perioſteum of the bones, and to the other contiguous parts. It lines the whole cavity; and, by ſending off portions or elongations, which riſe up in folds or duplicatures, from the ſurface of the cavity, it thus makes coverings, or external coats, for all, or moſt of the abdominal viſcera. Hence it is ſaid, that the abdominal viſcera lie on the outſide of the peritonæum, notwithſtanding that it thus lines the cavity within which they are contained.

§. VI. The bladder A B is ſituated between the ſymphyſes C of the pubis, and the anterior ſide of the cervex uteri D, and upper part of the vagina E. When it is diſtended with urine, the fundus A riſes higher than the upper edge of the pubis; but when collapſed, it lies cloſe to the neck D of the uterus, and ſuperior part E of the vagina. The anterior part of its neck is attached to the ſymphyſes of the pubis, by means of a cellular ſubſtance, and the peritonæum, which is reflected from this viſcus to the ſide of the pelvis and neighbouring parts; and the poſterior part of its neck is attached to the upper part of the vagina, by means of the cellular ſubſtance and that reflection of the peritonæum which makes the external coat to both it and the uterus. Its connection to the pubis is but looſe, which permits its dilatation and contraction. Its ſubſtance is made up of three coats, the external being the peritonæum, the middle one a texture of muſcular fibres, and the internal one membranous. Veſica urinaria. Plate II.

§. VII. The urethra is a tube, which paſſes from the inferior end B of the bladder, along a kind of groove formed on the inner ſurface of the ſymphyſes of the pubis, till it terminates externally by an orifice T, called meatus urinarius. By this groove or hollowneſs the urethra Urethra.

urethra is conſiderably defended from injury by the preſſure of the child's head, while the latter paſſes through the pelvis.

The length of the urethra.

The urethra is uſually about an inch and a quarter long; and from the meatus urinarius, to the fundus veſicæ, the diſtance is uſually about three or four inches.

Meatus urinarius.

§. VIII. The meatus urinarius F is ſituated immediately below the under edge of the ſymphyſes of the pubis, and about half an inch above the os vaginæ.

Rectum.

§. IX. The inteſtinal tube, immediately below the ſygmoide flexion g of the colon, takes the name of rectum, and paſſes down the poſterior ſide h h of the pelvis, till it terminates in the anus J. The anterior ſide K K of this inteſtine, called rectum, is connected to the poſterior ſide of the vagina L L, its whole length; and its poſterior ſide is connected to the anterior ſides of the os ſacrum and os coccygis, by means of the cellular ſubſtance h h.

Obſervation.

This inteſtine is naturally very capacious, and conſequently liable to be diſtended, ſometimes violently, with an incredible quantity of fæces; for which reaſon it ought always to be emptied, at the beginning of labour, by means of an enema.

The inteſtinal tube, by this ſygmoide flexion, enters the pelvis in an oblique courſe from the left ſide downwards, and under the great angle M of the os ſacrum, whereby it avoids that injury, which otherways it would often ſuſtain, by preſſure, as the child paſſes through the pelvis.

CHAP.

## CHAP. III.

### OF THE FORMS AND DIMENSIONS OF THE ABDOMINAL CAVITY, INCLUDING THOSE OF THE PELVIS.

THE abdominal cavity, (excluſive of the pelvis) when the viſcera are taken out, is of an irregular oval figure, though ſymetrical. It is bounded above, in a circular manner, by the diaphragm K; below by the pelvis, and behind by the lumbal ſpine D E F G H I, which projects above an inch and an half into its middle, and divides its poſterior ſide into two equal cavities. Its diameters are largeſt about the navel M, and upper part of the hypogaſtrick region; and at the lower end, or tuberoſities of the ilia, it becomes flat. Form of the abdominal cavity. Plate III.

§. II. The length of this cavity, in a well-ſized body, is uſually ſixteen inches, meaſuring from the appendix enſiformis L, to the ſymphyſes of the pubis N. From the ſymphyſes to the right lobe of the liver, it meaſures about ten inches, to the fiſſure of the liver thirteen inches, and to the ſpleen only ſeven or eight inches.

§. III. The breadth of it, above, is uſually about nine inches; at the flanks about ſeven inches; at the ſuperior tuberoſities of the ilia about ſeven inches; and at the anterior apex of the alæ T t, or criſtæ iliorum, about nine inches. Plate I.

§. IV. The body being upright, and a perpendicular line let fall from the articulation of the third and fourth vertebræ lumborum, reckoning upwards, it will deſcend about an inch before the ſymphyſes of the pubis; and if ſuch a line is drawn from

The reaſon why the child reſts ſo commonly on the brim of the pubis.

the great angle of the ſacrum, it will commonly fall on the inſide of the ſymphyſes a little below the brim. Hence it becomes evident, why the head of the child ſo frequently reſts upon the upper edge of the pubis, and thereby retards delivery; for if in a well-formed body, the child reſts ſo much here, as to hinder the birth, how much more will it be obſtructed when the angle of the os ſacrum is very prominent, and thereby throws the child's head conſiderably forwards over the brim of the pubis?

Form of the pelvis.

§. V. The cavity of the pelvis, its viſcera, namely, vagina, uterus, bladder and rectum being taken out, is of an oval form, in oppoſite directions; for at the brim it is wideſt from ſide to ſide, namely, between thoſe parts Z Z, where the pſoæ and poparts ligaments decuſſate; and at the bottom it is wideſt betwixt the anterior and poſterior ſides, that is, between the lower edge of the ſymphyſes N of the pubis, and the apex O of the os coccygis.

Plate I.

Plate II.

The hollow of the os ſacrum.

§. VI. The poſterior ſide is ſo hollow and concave, as to recede above four inches behind the angle of the os ſacrum; and, as Dr. Smellie has rightly obſerved, it is near four inches deeper on that ſide than it is at the ſymphyſes before, as may be ſeen by plate I. and II.

The anus J is ſituated near to the centre of the bottom; and the aperture P for the vagina, is immediately under the ſymphyſes of the pubis.

Dimenſions of the pelvis.

§. VII. The wideſt part of the pelvis at the brim, viz. at Z Z, meaſures uſually, in a well formed body, five inches; and in the largeſt ſize not above an inch more. The wideſt part of the middle, namely, from the inner ſide O of the ſymphyſes to the inferior end

Plate I.

Plate III.

P of

P of the os ſacrum, meaſures five inches; and at the bottom, from O to the os coccygis at A, five inches likewiſe.

§. VIII. The narroweſt part of the pelvis at the brim, viz. between the great angle D and the upper edge of the pubis Q, meaſures four inches; and at the narroweſt part of the bottom, namely, at the tuberoſities of the oſſa iſchii G G, its meaſure is the ſame. Plate I. Hence a body, whoſe dimenſions are five inches of diameter one way, and four the other, may paſs through the pelvis, provided it can turn round, as it advances, to make them correſpond with thoſe of the pelvis.

§. IX. The poſterior ſide of the pelvis from D to A, in a ſtraight Plate III. line, meaſures five inches and a half, ſometimes ſix; at the ſides Z Z four inches; and at the ſymphyſes of the pubis only an inch Plate I. and a half; ſo that, as has been obſerved, the poſterior ſide is nearly four times as deep as the anterior ſide.

## CHAP. IV.

### OF THE CHILD's HEAD, AND THE MANNER IT PASSES THROUGH THE PELVIS.

The form of the head.

THE child's head is of an oval form, ſomething flattened on each ſide; the vertex in a ſpeedy and natural birth is pretty round; but in lingering, or very laborious ones, it is uſually conical. From the vertex over the crown, forehead, face and chin, it riſes up in a ſemi-lunar form; and on the oppoſite ſide, namely, from the vertex to the nap of the neck, it is a little concave; ſo that, by a ſide view, it appears of a curved oblong form, ſomewhat reſembling that of a creſcent.

The dimenſions of the head, &c.

§. II. A middle ſized woman brought forth, by the natural efforts, a large ſized child, whoſe weight and dimenſions were as follow;

Firſt child.

The weight ten pounds and eight ounces Troy.

The diameter of the head, from temple to temple, was three inches and an half; from os frontis to occiput four inches and an half; and the circumference at thoſe parts was thirteen inches.

The breadth of the body, at the ſhoulders, was five inches; the length of the head, from vertex to chin, ſix inches, and that of the whole child full 21 inches.

Second child.

§. III. A young woman, who was muſcular, ſmall ſized, and in her firſt pregnancy having ſuſtained a very tedious and violent labour, at laſt, by the force of pains, brought forth a child, whoſe weight was only eight pounds five ounces Troy; its head, however, was of the following dimenſions;

From

From temple to temple four inches; from os frontis to occiput five inches and an half; the circumference, at thoſe parts, fourteen inches; and the length, from vertex to chin, was eight inches and an half.

This child's head was greatly ſqueezed out in length, by the violent compreſſure which it had ſuffered in its courſe through the pelvis.

§. IV. A large woman, who had born ſeveral children, in 1759, brought forth a child of the following weight and dimenſions: Third child.

The weight, fourteen pounds and one ounce Troy; the length of the whole body, twenty-two inches and an half.

The diameter of the head, from temple to temple, four inches; from os frontis to occiput five inches and one-eighth; its circumference, at thoſe parts, fifteen inches; and its length, from vertex to chin, five inches and one-fourth.

The circumference of the body, at the ſhoulders, arms included, eighteen inches and an half; and at the ilia fifteen and an half.

The breadth of the body, at the ſhoulders, ſeven inches; and at the ilia ſix inches.

§. V. Now, when a well formed pelvis is naturally furniſhed with the fleſhy parts, it may reaſonably be allowed that each dimenſion, obſerved in Chap. III. §. 7, and 8, will become leſſened about a quarter of an inch. Hence, as an ordinary ſized child comes along through the uterus and vagina, there will be the eighth part of an inch on every ſide, to permit its paſſage through the pelvis. The dimenſions of theſe three childrens heads compared with thoſe of the pelvis.

This being allowed, let us next compare the forms and dimenſions of theſe three childrens heads, with thoſe of ſuch a pelvis; and then conſider, which way they could paſs the moſt eaſily through it.

The

The head of the firſt child was four inches and an half at the thickeſt part, and three and an half at the thineſt or narroweſt part, which proves, that each dimenſion of this head, was a quarter of an inch leſs than thoſe of ſuch a pelvis.

Moreover, the length of the head being ſix inches, which was only equal to the depth of the poſterior ſide of the pelvis; and the ſhoulders five inches, which being ſcarcely equal to the wideſt part of the pelvis, conſidering how much they are compreſſible; hence, there muſt be room for this child to paſs in the following directions:

How they paſſed thro' the pelvis.

§. VI. Daily experience proves, that a child cannot preſent itſelf in a more natural poſition to the birth, than with either its vertex or crown to the center of the pelvis, and the face to one ilium (either of them the ſame) namely, to Z, or from that a little towards the ſacrum; as for inſtance, to S. Now let a child of this ſize, preſent itſelf in this poſition, and its head will be forced on by the contractile and expulſive force of the uterus, and that of the abdominal muſcles, till the hind part of the vertex comes againſt the tuberoſity G of the os iſchii, at which place it will halt a pain or two, even in the moſt ſpeedy and natural birth; for as the broadeſt part of the head comes now to the narroweſt part of the pelvis below, or a little before it, it can advance no farther in that direction; therefore as the opening of the bones at the bottom of the pelvis behind, viz. the ſpace, between the tuberoſities of the oſſa iſchii, the coccygis, and the edges of the os ſacrum, is leſs than that which extends between the foreſaid tuberoſities GG, and lower edge of the ſymphyſes n, and is alſo covered with ligaments and muſcular parts, which make great reſiſtance; hence, as the vagina and its orifice at this time of the labour are uſually well opened, conſequently little reſiſtance on this ſide; the vertex, by the propelling force of the pains, will naturally advance before the tuberoſity againſt which it

Plate I.

reſted;

reſted; and by the curved form of the pelvis, and that of the head, as it moves on, the hind part of it will turn moſt readily towards H, then to the ſymphyſes n of the pubis*, and the face, in conſequence, round to the hollow of the ſacrum, &c.

The crown (or the vertex when the head is ſqueezed out in length) being now come into the os vaginæ, and the pains redoubling their force, the hind, or curved part of the head, will move forwards to the inſide of the ſymphyſes, and the face puſh out the perinæum. Thus it will advance from below the pubis forwards, till it is entirely without the labia pudendi; after which the ſhoulders, now pointing to the wideſt ſides of the pelvis, and beſides being generally leſs than the head, as they are capable of being conſiderably compreſſed, they will come forth alſo, and conſequently the reſt of the body will follow.

A hint when the forceps can be uſed with ſucceſs.

It may be excuſable for me to obſerve here, as a neceſſary hint in uſing the forceps, that in caſe of an ordinary ſized head, when the vertex is arrived at the os vaginæ, the chin, at the ſame time, will be deſcended a little below the great angle of the ſacrum.

§. VII. The dimenſions of the ſecond child being conſidered, the wideſt or thickeſt part of the head proves to be three-fourths of an inch more than the wideſt part of the pelvis deſcribed; the thinneſt part of it was equal to the narroweſt part of the pelvis; and the length of it nearly three inches more than the depth of the pelvis at its poſterior ſide.

Now let us ſuppoſe that the pelvis of the woman, which admitted the birth of this child, was half an inch every way larger than that deſcribed in Chap. III. §. 7, 8, and 9. (though I am certain it was not) and that the child paſſed through it in the ſame directions and turnings as deſcribed in the laſt ſection (which it really did) yet we may

* This opening N n, ſhews the natural diſtance between the oſſa pubis, the cartilaginous ſubſtance being removed.

eaſily perceive that this birth muſt be very tedious, and extremely difficult for the following reaſons:

Firſt, The circumference of the head being larger than that of the pelvis, many pains (and ſtrong ones too) muſt be required to ſqueeze it out in length, ſo as to be received at the brim of the pelvis.

Secondly, It being thus lengthened, the chin muſt be more than two inches above the great angle of the ſacrum, when the vertex was at the os vaginæ; hence, as the head advanced, one ſide of the chin would preſs againſt the great angle D of the ſacrum; the head, a little above the ear, againſt the inſide of the pubis above Q; and the vertex againſt the poſterior edge of the os vaginæ, or anterior part of the perinæum R; conſequently many pains muſt be required to force it along, and turn it round, to anſwer to the curvature of the pelvis. Plate III.

Thirdly and laſtly, The os tincæ, the vagina and its orifice, and the labia pudendi being loth to give way to the firſt birth, eſpecially in women who are muſcular and work hard, as was the caſe here, many pains, therefore, muſt have been ſuſtained, before the reſiſtance made by thoſe parts was overcome.

§. VIII. Finally, let us now conſider how the third child, whoſe ſize was ſo very large, made its paſſage, even ſuppoſing the pelvis of the mother was half an inch at the narroweſt part, and an inch at the wideſt, larger than the pelvis deſcribed, (Chap. III.) as I believe was the caſe here; notwithſtanding that the ſhoulders were ſeven inches broad, and their circumference eighteen inches and an half, which was more than equal to that of the pelvis, ſuppoſing it had been ſix inches every way.

Now, the poſſibility of its paſſage becomes very evident, when we conſider that the head was only of an ordinary ſize; and although the ſhoulders might be an inch wider than the wideſt part of the pelvis;

pelvis; yet (as obſerved before) as they were capable of being leſſened by compreſſure, there was room for their paſſage. Beſides, there were other circumſtances which help'd ſomewhat to facilitate this birth, viz. She had bore ſeveral children before this, ſome of whom had been very large; ſhe had alſo, at this time, a very copious quantity of the liquor amnii, which greatly ſoftened and lubricated the parts: and, as I found the body halt, when the head was come forth, I aſſiſted by bringing down one ſhoulder, in the manner as ſhall be directed in its proper place; after which, the other, and then the body followed.

Theſe circumſtances did, no doubt, haſten this birth; yet, conſidering what nature does frequently, when left to herſelf, it is not improbable, but ſhe could have done this alone.

## CHAP. V.

### OF THE FEMALE ORGANS OF GENERATION.

Pudenda. Plate II.

THAT round and ſoft eminence Q, which is placed on the anterior ſuperior part of the ſymphyſes of the pubes, called mons veneris.

Mons veneris.

Labia pudendi.

Labia pudendi, divides at the middle of its inferior edge R into two prominent equal parts S, called labia pudendi, which deſcend about three inches downwards and backwards, and then joining together at T, terminate in what is called the perinæum.

Perinæum.

The perinæum U, is that ſpace, or fleſhy continuation which lies between the union T of the labia, and the anus J. Its extent is uſually about an inch and half; and from the anus to the apex of the os coccygis, the extent of the fleſhy parts backwards, is uſually about two inches.

Foſſa magna.

The labia pudendi being held apart, there appears a deep ſulcus d, called foſſa magna, which is covered with a rediſh ſmooth membrane.

Clitores.

In the upper end of the foſſa magna, nearly oppoſite to the middle of the ſymphyſes, there appears a round eminency, e, called clitores.

Nymphæ.

Immediately from the clitores there paſſes on each ſide of the foſſa, downwards and outwards, two high folds, or doublings W, called the nymphæ.

Meatus urinarius.

About an inch below the clitores, in the centre of the ſulcus, between the nymphæ, and about half an inch above the os vaginæ, there appears the meatus urinarius F; the lower edge of which being a little prominent, aſſiſts the introduction of the catheter, as ſhall be obſerved more fully hereafter.

At the lower part of the foſſa magna, about half an inch within the labia, and cloſe to the anterior part of the perinæum, there appears the os vaginæ P, called alſo os externum. This orifice cloſes itſelf by folds or wrinkles, and, from its outer edge at P, there riſe, at nearly equal diſtances, four angular productions, like X, called carunculæ myrteformes. Theſe carunculæ, in women who have had children, become very obtuſe, and are frequently intirely obliterated. Os vaginæ. Carunculæ myrte formes.

In ſome virgins, they make but one membrane, called hymen, which partly, ſometimes intirely, cloſes up the orifice. Hymen.

§. II. The vagina Y, or entry to the uterus, is ſituated between the urethra and rectum. In the virgin ſtate it is uſually about four inches in length; but in women who have had children, it becomes ſhorter; that is, the os tincæ is lower; its ſubſtance is muſcular, and in thickneſs reſembles that of the bladder, but is more denſe. It is ſurrounded externally by a cellular ſubſtance, which connects it to all the neighbouring parts, namely, its anterior ſide to the os pubis, urethra, and neck of the bladder; and its poſterior ſide to the rectum, its whole length. Vagina, or entry to the uterus.

Its inner coat is a continuation of that membrane, which covers the foſſa magna; but is much thicker, riſes up, eſpecially near the orifice, into many tranſverſe rugæ, 1, 2, 3 and 4, and appears of a dark grey colour.

At the upper end E L, it becomes conſiderably longer in capacity, and then contracting quickly, it terminates in the ſubſtance of the uterus, having firſt ſurrounded that organ about half an inch above the os tincæ.

§. III. The womb, or uterus, is properly a continuation of the vagina; it is ſituated between the bladder and rectum, with its fun- The womb, or uterus.

dus f upwards, and the ſmalleſt end, in which is the orifice g, called os tincæ, os uteri, or os internum, downwards, and projecting about half an inch into the upper end of the cavity of the vagina.

Form. It is flat, and of a triangular form; two of which angles are upwards, and the other downwards. One flat ſide is towards the pubes, and the other the os ſacrum, and the edges are towards the ilia.

Magnitude. In the virgin, and ungravid ſtate alſo, it is uſually three inches long; two and about three quarters broad near to the fundus, namely, where the fallopian tubes enter or open into its cavity; and only about five-eighths of an inch broad at the os tincæ.

Breadth.

Thickneſs. Its diameter, in thickneſs, at the fundus, is uſually about an inch and a half, and at the orifice about half an inch.

Cavity of the cervex. The paſſage or entry from the os tincæ, through the cervix, into the cavity of the uterus, that is, from g to i, is uſually an inch long, and two-eighths of an inch broad; ſo that its capacity will admit readily the pipe of a ſyringe, whoſe ſize is about that of a catheter.

Cavity of the body. The cavity of the uterus correſponds in form with that of the external configuration, for it is triangular. From the cervix at i, to the fundus at f, it uſually meaſures about an inch and a half; at the orifice of the fallopian tubes it is about an inch in breadth; and in depth, that is, from the anterior to the poſterior ſides, two-eighths of an inch.

The thickneſs of the ſubſtance of the cervex. The thickneſs of the ſubſtance of the cervix (meaſuring about an inch above the os tincæ) from the inner to the outer ſurface, is uſually about five-eighths of an inch; and from this part to the orifice it grows gradually thinner.

Thickneſs of the body. The thickneſs of the body of the uterus, meaſuring alſo from the cavity to the outer ſurface, is pretty equal, and is uſually about half an inch.

The

The whole ſubſtance of the uterus appears to conſiſt of many glands, interwoven with many ſmall ligamentous fibres, ſmall branches of nerves, and with arteries and veins innumerable. Texture of the uterus.

The inner coat, eſpecially that part which lines the cervix, is a continuation of the membrane which lines the vagina. On the cervix its ſurface is ſmooth, but nevertheleſs riſes up in many ſmall rugæ, like thoſe near the os vaginæ.

The inner ſurface of the body of the uterus is covered with a very fine fibrous ſhag, or villi, amongſt which there are many ſmall apertures (as have appeared to me) or oblong orifices, which open from the ſides of thoſe veins that lie next to this ſurface. Apertures on the inner ſurface.

Theſe orifices will be better underſtood by two caſes, which occurring to me in the year 1757, ſhall be taken notice of hereafter.

The external coat of the uterus is only a reflection of the peritonæum, which flying off from the ſides of the pelvis, and poſterior ſide of the neck of the bladder, reflects over the whole uterus, and then paſſing off from that, covers the inteſtinum rectum. External coat.

This portion, or duplicature of the peritonæum, by paſſing off from the ſides of the uterus to the ſides of the pelvis, namely, under the decuſſations at Z Z, or rather before thoſe parts, is there firmly connected, and makes what is called ligamenta uteri lata. Ligamenta uteri lata. Plate I.

The ligamenta uteri lata, thus formed by a duplicature of the peritonæum, making two broad faſciæ, one edge of which being upwards, and level with the brim of the pelvis, the other downwards, and extending to near the middle of the pelvis, that is to ſay, near half its depth, ſerve not only to ſupport the uterus, but likewiſe to convey nerves and blood veſſels to it, from the ſides of the pelvis. Their upper edges are alſo formed into two folds, the poſterior of which ſerve to cover the ligaments that attach the ovaria to the uterus.

Theſe ligaments, being thus broad, and firmly connected to the ſides of the pelvis, are rendered fit, not only to ſupport the uterus, but alſo to prevent its tilting forwards or backwards. Nevertheleſs, ſome years ago, I met with a caſe in which the os uteri was turned directly to the pubes, and conſequently the fundus towards the poſterior ſide of the pelvis, rather lower than the orifice; which occaſioned much pain and uneaſineſs to the woman. At firſt I did not know what to make of it; but having carefully ſearched about with the point of my finger, till I found the orifice, I then brought it down, by ſometimes moving the fundus gently up, and at other times getting the point of my finger above the orifice. This patient did not complain of any pain afterwards, nor did the uterus deſcend any lower than uſual in the pelvis. Nay, ſince that time, ſhe has been ſeveral times pregnant, and has gone the whole time without any bearing down, or other complaints; hence this overturn, I think, of the uterus could not be occaſioned by a relaxation of thoſe ligaments.

Beſides this caſe, I have had one ſince, of the ſame nature, in a woman who had never born any children, and whoſe uterus was high in the pelvis.

Ligamenta uteri rotunda.

Plate II.

The round ligaments v, of the uterus, ariſe from its edges, immediately below the fallopian tubes; and paſſing along, within the forepart of the broad ligaments, they then mount upon the ſides of the pelvis (6.) by the outſide of the hypogaſtrick artery; then, making a turn inwards and downwards, paſs from under the edges of the tranſverſales obliqui muſculi, and through the tendons of the obliqui interni muſculi; after which, they terminate in the ſubſtance of the mons veneris.

The origins, directions, and inſertions of theſe ligaments being conſidered, it does not ſeem improbable that they aſſiſt not only in bringing the uterus lower and cloſer to the os pubis, in the time of coition,

coition, that it may receive the ſemen maſculinum in a direct line: but alſo, in exciting the fallopian tubes to the performance of their functions in the work of generation. The ſubſtance of theſe ligaments is vaſcular, and although both they, and the broad ligaments, admit the uterus, in the virgin ſtate, to move only about an inch up and down; yet, in the pregnant ſtate, they admit of great diſtention, and nevertheleſs recover themſelves, after parturition, with ſurprizing quickneſs.

The fallopian tubes.

The tuba fallopiana of each ſide, begins by a ſmall orifice on the inner ſurface of the uterus, in the angle near the fundus. From thence, paſſing through the ſubſtance of the uterus, a little obliquely downwards and outwards, it runs along within the ſuperior edge of the anterior fold of the broad ligament, (7.) until it arrives upon the edge of the pelvis, (8.) at which place it reflects back, and turns over behind the ligaments, and about one inch of its extremity hangs looſe in the pelvis, near the ovarium.

The fimbriæ.

The extremities of theſe tubes are jagged, ſomewhat reſembling fingers, and are known by the name of fimbriæ, or morſus diaboli. The tubes themſelves, are uſually about three inches long, their cavities are extremely ſmall at the inner orifice; but as they approach towards the fimbriæ, they become gradually larger.

The ovaria.

The ovarium (9.) of each ſide, is ſituated behind the fallopian tube, about an inch from the edge of the uterus, to which it is attached by the poſterior doubling of the upper edge of the broad ligament, as has been already obſerved. It is of a flat and angular form, the largeſt ſide being an inch, and the other two, about three quarters of an inch.

Its ſubſtance appears white and glandular; it is covered with a production of the peritonæum, and hangs looſe in the cavity of the pelvis, juſt behind the broad ligament, and contiguous to the fimbriæ of the fallopian tube.

§. IV.

Arteries of the uterus.

§ IV. The uterus is ſupplied with blood by means of the ſpermatic and hypogaſtric arteries; and its blood is conveyed back, or returned by the veins of the ſame names.

The ſpermatic arteries ariſe from the great aorta, about an inch above the origin of the meſenterica inferior. (Sometimes they ariſe from thoſe of the kidnies, eſpecially the ſpermatic on the right ſide) then paſſing downwards, and a little outwards, they mount over the iliacæ to the ſides of the pelvis; from thence they paſs along in the duplicature of the broad ligament to the ovaria, into whoſe ſubſtances they ſend branches; then paſſing along the ligaments of the ovaria, they anaſtomoſe with thoſe of the hypogaſtric; after which, ſome branches enter into the ſubſtance of the uterus; where, dividing into many ſmaller and ſmaller branches, they finally loſe themſelves by anaſtomoſes.

That branch of the iliac artery, on each ſide, called arteria hypogaſtrica, having run downwards and inwards upon the inſide of the pelvis, about an inch and half below its origin; it then divides into three branches, the anterior of which retains the name; the middle branch is called, pudica interna; and the poſterior, arteria ſciatica.

The remains of the umbilical artery.

The continued trunk, or anterior branch, having paſſed a little down, then reflects upon the ſide of the bladder, where it ſoon becomes impervious. This branch is the only remains of the umbilical artery; which, in the embryon ſtate, went from the bladder to the navel, and ſo along the funis to the placenta.

Pudica interna, or that hypogaſtric branch which ſupplies the uterus.

The middle branch, called pudica interna, paſſes off from the ſides of the pelvis, and within the broad ligaments, to the edge of the uterus, where it enters the upper part of the cervix, about an inch above the os tincæ. Having arrived in the ſubſtance of the uterus, it makes a conſiderable curve or turn, and then divides into two branches, the ſmalleſt of which, makes a turn downwards, along the ſide of the os tincæ to the vagina; in the ſubſtance of which, having divided into

into many ſmall branches; theſe branches loſe themſelves by anaſtomoſing with the branches of that from the other ſide.

The largeſt branch paſſes up the edge of the uterus, in many windings and convolutions, continually ſending off branches into its ſubſtance, many of which anaſtomoſe with the branches of the pudica interna of the other ſide, and with thoſe of the ſpermatic arteries.

Having got as high as the fallopian tube, the remaining trunk paſſes from thence to the ovarium; where, meeting with branches of the ſpermatic artery, it thence terminates by anaſtomoſes.

About an inch, before theſe arteries enter the uterus, they detach branches to the bladder, by which that organ is ſupplied with blood.

I do not know that it has yet been diſcovered in the unpregnant ſtate, whether any of theſe arteries of the uterus terminate on its inner ſurface or not: but in the gravid ſtate it has been diſcovered.

Veins of the uterus.

§. V. The veins of the uterus, like thoſe in other parts of the body, are only the continuations of thoſe branches of the arteries, which have not loſt themſelves by anaſtomoſes, with other arteries, as above deſcribed. In this organ they are extremely convoluted; and, in many places, the ſides of two coming into contact with each other, their coats become ſo united as to ſeem but one; in which part may be found an aperture or oval orifice, through which blood may paſs, immediately out of one into the other.

They are ſo extremely numerous, and intermixed with one another, that no regular deſcription of their courſes can be given; and they are ſo capable of enlargement, that in time of pregnancy, ſome of them will eaſily admit the end of one's finger, eſpecially near thoſe parts where the ſpermatic and hypogaſtric arteries enter. At which places,

uniting into four trunks, viz. two on each ſide, called the ſpermatic and hypogaſtric veins, they then paſs forth by the ways in which the arteries came; and terminate in the larger veins, viz. the ſpermatics in the vena cava, (the left one commonly in the left emulgent) and the pudica in the vena hypogaſtrica. Theſe veins have no valves, nor are they very large after they leave the uterus.

Obſervation. It may be neceſſary to obſerve here, that the veins of the ſtomach, inteſtines, pancreas, ſpleen, meſocolon, meſentery, and epiploon, conduct their contents into the vena portarum; and that by the vena portarum, all this blood is conveyed through the ſubſtance of the liver, and from thence conducted by the vena cava hypatica, into the vena cava itſelf, before it returns to the heart.

But the veins of the uterus, vagina, bladder, kidnies, and lower limbs, convey the blood from their reſpective places directly to the vena cava, without ever paſſing through the liver in its return.

Inference. Hence it appears, that when obſtructions and inflammations enſue in the liver, the ſtomach, inteſtines, pancreas, ſpleen, meſentery, meſocolon, and the epiploon, muſt all be affected alſo; becauſe the return of the blood from thoſe parts to the heart, muſt be retarded, in proportion to that degree of obſtruction which has happened in the liver. Now as the obſtruction of the venal blood increaſes, and becomes more general in thoſe parts, there will be a greater reſiſtance to the influx of the arterial blood into them; hence, a larger quantity of it muſt paſs into thoſe arteries which ſupply the other parts of the body; and, as the kidnies, bladder, uterus, vagina and lower limbs, are depending parts, it is not improbable, but that more of this blood may be conveyed to them, than what their veins are able to return duly to the heart; hence, bloody urine, uterine hœmorrhages, hœmorrhoides, and ſwelled legs, &c.

Happy it is for child-bearing women, that the blood conveyed into

thoſe parts laſt mentioned, doth not paſs through the liver in its return to the heart!

Lymphatics of the uterus.

§. VI. Beſides the ſanguiferous veſſels, there is another ſpecies, with which the uterus is furniſhed, called the lymphatics, whoſe office is to carry a pellucid fluid called lymph.

Theſe veſſels are ſo very numerous, and their diſtribution ſo extremely intricate, that a particular deſcription of them cannot be given. But, as to their origin and uſe, theſe points have been ſo fully explained by the moſt ingenious Dr. William Hunter, that I ſhall recommend the reader to his works.

Lymphatic glands.

There are alſo many excretory glands in the uterus, particularly on its inner coat; from whence that diſcharge, called the fluor albus, doth chiefly proceed.

Nerves.

§. VII. With reſpect to the nerves, it becomes needful in this work, to deſcribe them, ſo far as can ſerve to elucidate the ſympathy, which, is well known, ſubſiſts between the uterus, and ſome other parts of the body; to which end, I ſhall begin with the two intercoſtals.

The intercoſtal nerve of each ſide, having originated by branches from the fifth, ſixth, ninth, and tenth cephalic nerves of the ſame ſide; and alſo from the firſt and ſecond of the ſpinal nerves; it then deſcends into the thorax and forms a ganglion, from which a branch is ſent to the heart, and there joined by another branch from the eighth cephalic nerve of the ſame ſide.

After this, the intercoſtal nerve deſcends upon the ſide of the ſpine, receiving additional nerves from between the vertebræ; and then, having penetrated the diaphragm, it ſoon forms another ganglion, which likewiſe receives branches from the eighth pair of cephalic nerves. From thence, it deſcends on the ſide of the abdominal

ſpine, and detaches branches to ſerve the inteſtines, liver, ſpleen, pancreas and kidnies.

After this, it deſcends into the pelvis, on the ſide of which, it divides into branches, ſome of which are diſtributed to the uterus, ovarium, bladder, rectum, and neighbouring parts.

The eighth pair of cephalic nerves, ſends branches alſo to ſupply the lungs, gula and ſtomach; from which connections, we can account for the ſympathy which exiſts between thoſe parts, the heart and the viſcera of the pelvis.

Caſe I. §. VIII. Having a deſire to take a new ſurvey of ſome particular parts of the female ſubject, and to diſcover if there was any paſſage which led from the cavity of the uterus, more directly to the ovaria, than that diſcovered by the fallopian tubes: I applied to that experienced, and moſt excellent anatomiſt and ſurgeon, Mr. John Hunter, who injected the abdominal arteries of a young woman for me, in the beginning of November 1757, by which operation they were nicely filled.

Then, having examined the body, and wrote ſuch obſervations as I thought uſeful to the preſent work, we took out the viſcera of the pelvis, in order to try the experiment I had thought of, which was this, viz. to tie the extremities of the fallopian tubes, and throw an injection into the cavity of the uterus, by way of the vagina. Accordingly,

We firſt tied the extremities of thoſe tubes near to the fimbriæ, then, having filled a ſyringe with flake-white and water, we placed it in the vagina, ſo as to make its pipe correſpond with the os tincæ, and bound it faſt. This being done, the injection was then forced into the cavity of the uterus; the reſult of which was, that by the time the cavity of the uterus was well filled, the injection run out at the ſections of the ſpermatic and hypogaſtric veins; which ſections were

were in the duplicature of the broad ligaments, at the diſtance of above an inch from the ſide of the uterus, and which we had left untied: but we could not find any part of the injection in the ſubſtance or veſſels of the ovaria; from whence we concluded, that if there were any paſſages which led directly from thoſe parts into the cavity of the uterus, they muſt certainly be thoſe of the minuteſt kind.

By inſpecting the inner ſurface of the uterus, we obſerved there were many ſmall apertures, or orifices, through which the injection had paſſed from the cavity into the uterine veins; and by dividing the uterus into ſeveral pieces, we found that the injection, (viz. the white part of it) did remain in the veins through moſt of its ſubſtance.

In examining the ovaria, the left one appeared to us to be diſeaſed; but in opening the one on the right ſide, we found a calix in its upper outer angle large enough to contain an ordinary pea.

The ſide of the calix, next the coat of the ovarium, was extremely thin, and ſeemed to us to have been lately perforated, for the cicatrices of this part of union were ſcarcely cloſed; and the other part of the calix, which did not lie contiguous to the coat of the ovarium, was thick and very firm.

Mr. Hunter now obſerved to me, that, in all thoſe which he had inſpected, he had always found the calices in the upper outer angle of the ovaria.

In a few days after the above experiment was made, I was called to a poor woman at the diſtance of about four miles. I haſted thither, but before I arrived ſhe was dead; the perſon who attended not being able to perform the delivery. Caſe II.

The next day I opened the body, and found the child, which was pretty large, lying acroſs the uterus. It being taken out, there appeared a large perforation in one ſide of the uterus near the cervix, and the abdominal cavity conſiderably filled with coagulated blood.

The

The uterus being next taken out, its form reſembled that of a flaſk. At the cervix its ſubſtance was five-eighths of an inch thick, and in the body half an inch thick.

The texture of its ſubſtance was not ſo compact as that of an ungravid uterus, for its veſſels were ſo extremely enlarged, that ſome of them, particularly two, on each ſide, at that part where the ſpermatics enter, and two at that part where the hypogaſtrics enter, were ſo capacious, as eaſily to receive the end of my finger.

On the inner ſurface of the veſſels, both large and ſmall, there appeared many orifices of anaſtomoſing veſſels, ſome ſo large as to receive the end of a gooſe's quill, and others ſmaller in proportion to the ſizes of the veſſels in which they were.

In ſome places theſe anaſtomoſing trunks or veſſels run immediately from the ſide of one veſſel to that of the next, and opened into it at a very little diſtance from the other; and in ſome other places, where the ſides of veſſels lay contiguous to each other, thoſe coats were ſo united or joined as to ſeem but one, in which places there were apertures as if made by the point of a lancet, through which the blood could paſs immediately out of one into the other.

The inner coat of the body, namely, that ſurface which ſurrounds the cavity of the uterus, was covered with a villi or ſhag, ſomewhat deeper than that in the virgin ſtate; amongſt which the apertures, which I here call the lateral orifices of the uterine veins, were manifeſt, and appeared as if made by the point of a lancet in direction of the veins.

The lateral orifices of the uterine veins.

Having dilated ſome of thoſe apertures which were in the ſides of the veins that lay next the cavity, I obſerved the orifice in the other ſide of the ſame veſſel, (as I have mentioned before) which opened into the others that lay next behind them, and ſo on through the whole ſubſtance.

Theſe orifices, and the ſhort anaſtomoſing trunks alſo, were moſt

numerous about the upper part of the cervix, and near to the fundus.

The internal orifices of the fallopian tubes appeared on the inner ſurface of the uterus, a little above the middle of its cavity, and were large enough to admit the end of a catheter to paſs into them.

The tubes themſelves were nine inches long, and their diameters alſo, during their whole length, were much enlarged.

The ovaria were two inches from the ſides of the uterus, ſo that their ligaments alſo were a little extended. Having carried this uterus, in a day or two after I had examined it, to Mr. Hunter, in order to ſhew him the lateral orifices; he obſerved them, and proceeding farther, by opening the ovaria, he found an ovum as large as a common pea; one edge of which laid cloſely contiguous to the coat of the ovarium, and was ſituated in the upper outer angle of it.

What I have advanced concerning the apertures, called lateral orifices, may perhaps occaſion ſome matter for diſpute, eſpecially among thoſe, who are very fond of controverſies, becauſe, ſo far as I know, thoſe orifices, which have been obſerved on the inner ſurface of the uterus, have not been explained in the ſame way. Obſervations.

As ſoon as I had wrote the two caſes above-mentioned, I ſhewed them to ſeveral of my friends; informing them, at the ſame time, that it was my real opinion, the menſtrual flux muſt be made by thoſe orifices, and not from the extremities of arteries, as commonly believed.

Nevertheleſs, about four years afterwards, being deſirous to know more particularly what had been ſaid on the ſubject, I looked into the works of ſuch authors as I could meet with, and found that

ſeveral,

ſeveral, namely, 1° Highmore, 2° Spegelius, 3° Maureceau, 4° Winſlow, 5° Littre, 6° Morgagni, and 7° Dr. Burton, had mentioned their having ſeen orifices, on the inner ſurface of the uterus, filled with blood; eſpecially in women who had been hanged, and in thoſe who had died in the time of the catamenia, which orifices I believe to have been ſuch as I have deſcribed.

Nevertheleſs, if I miſtake not, the ſum of all they advance means only this, to wit, that they believed them to be the orifices of ſhort veins, whoſe other ends opened into what they called the ſinuſes of the uterus; now, in my opinion, thoſe ſinuſes are nothing elſe than the dilated veins above-mentioned, and their ſhort veſſels, only the little trunks which I have obſerved, are in the anterior ſubſtance of the uterus.

The very learned doctor Aſtruc has publiſhed a copious and very laborious treatiſe on the ſtructure of the uterus and the diſeaſes of women, which treatiſe I firſt met with in the year 1762. I ſhall quote him on this ſubject.

In vol. I. §. II. he ſays:—"But what conſtitutes the moſt im-
" portant, in the diſtribution of the blood in the uterus, is that,
" from each point of re-union of thoſe veinous anaſtomoſes, at the
" place where the two veſſels communicate with each other, and where
" the conflux of blood is formed often, even in different places along
" the veins, or their anaſtomoſes, there riſes perpendicularly a little
" projection, or a little appendix of a vein of the ſame ſize, which

1° Corporis humani diſquiſition. anatomic. lib. iii. part. iv. cap. 4.
2° De humani corporis fabrica, lib. viii. cap. 20.
3° Hiſtoire de l'Academie des Sciences, ann. 1720, part xvi.
4° Expoſit. anatom. duobus ventre, p. 574, edit. in 4to.
5° Hiſtoire de l'Academie 1701, p. 293.
6° Adverſaria anatomica, adverſ. i. §. 33, and iv. §. 27.
7° Eſſay towards a new ſyſtem of midwifery, p. 17, 18.

" pierces the internal coat of the uterus, and terminates on its ſurface.
" Theſe veinous appendices are only ſenſible in women who are preg-
" nant, and only during their laſt months of pregnancy; but it is
" there found, that they project into the uterus three or four lines, in
" places where the placenta adheres to it; that by theſe projections
" they ſink into, or as it were, bury themſelves in proportionable
" hollows or beds, which are formed in the ſubſtance of the placenta;
" that they conduce, by this means, to ſtrengthen the adheſion of the
" placenta to the uterus; and, moreover, that they emit through
" their extremities, which are open, the blood of the mother into the
" cellulæ of the placenta, from whence it is abſorbed by the umbilical
" veins, and conveyed to the embryo."

Although I pay the greateſt deference to the opinion of this author, and to that of thoſe above-mentioned, not doubting but that they gave their ſentiments fairly, as they believed; yet, as I have not been able to diſcover the ſhort veins leading from the inner ſurface of the uterus into what is called its ſinuſes, nor the projections called appendices; but in place of them have ſeen what I have called the lateral orifices, &c. I cannot but abide by this opinion, 'till farther proofs decide it; at which time, if alive, I ſhall readily aſſent to the truth, be it for me or againſt me.

## CHAP. VI.

## OF THE CATAMENIA.

SINCE my firſt publication of this work, it has often been a queſtion with me, whether ſome principal or energetic power, inherent in the uterus ( ſimilar to thoſe, which are implanted in the liver, pancreas, kidneys, &c. and which enable them to perform their reſpective functions ) do not produce thoſe diſcharges called menſes? But it is my opinion ſtill that they flow from the lateral orifices of the uterine veins, deſcribed, Chap. V. §. V. and VIII. And that the above queſtion requires farther attention, is more evident to me, from a few obſervations given me by my moſt valuable friend, Mr. John Hunter, in his lectures on the Theory and Principles of Surgery; which obſervations being in point, I here inſert witn his permiſſion. When ſpeaking of the blood, he ſays,

" If the life of the blood is deſtroyed inſtantanouſly as often happens " in perſons killed by lightning; and alſo in conſequence of ſome " ſudden deaths by diſeaſes, coagulation does not take place in the " blood: But, if this life is allowed to die ſlowly, the blood in that " caſe coagulates; owing to an action ariſing in its life, in conſequence " of the ſtimulus of death, and which takes place before the death of " the blood is produced; and, in this reſpect is exactly ſimilar to a " muſcle.

Having offered ſome illuſtrations, he inſtances the menſes, and ſays, " The blood diſcharged in menſtruation, is neither ſimilar to blood " taken from a vein of the ſame perſon, nor to that extravaſated by an " accident, in any other part of the body; but is a ſpecies of blood, " changed, ſeparated, or thrown off from the common maſs, by an action

" tion of the veſſels of the uterus, in a proceſs ſimilar to ſecretion ; by " which action the blood having loſt its living principle, it does not " afterwards coagulate".

He then adds, " If the menſes are natural, and the perſon healthy, " they do not coagulate ; but, the caſe being otherways, coagulation " takes place, and they come away in clots, as not unuſually happens " about the change of life. Now, ſays he, it follows ; " That when " the action of the conſtitution is by any means weakened or obſtructed " ſo much as not to be able to produce thoſe diſcharges, in a due quan- " tity, quality, and time, ſuch an evil cannot be remedied by taking " away an equal quantity of blood from the common maſs by vene- " ſection. Could we indeed find a ſubſtitute for this action, as well " as for the ſimple evacuation of blood, our art would approach much " nearer to nature ; and thereby render our method of cure more " certain."

Should theſe periodical diſcharges depend on any other cauſe than that above aſſigned, viz. an energetic power implanted in the uterus, I know not any other data, which ſerve to explain; and therefore ſhall only inſtance what we know of the catamenia by effects.

In this Country, the moſt uſual time of their commencement is about the age of fifteen ; and that of their total ceſſation about forty-five or fifty. They compleat their moſt regular periods every month, that is to ſay, when they have continued from three to ſix days they go off, and return again about the beginning of the fourth week. Before their firſt eruption the virgin is uſually indolent and ſhort breathed. She is affected with diſorders of the head, either heavineſs or ſhooting pains, drowſineſs or want of ſleep, frightful dreams, awaking with ſtartings, &c. the pulſe is now and then oppreſſed ; ſometimes the face appears of a yellowiſh caſt ; there is commonly a duſky colour about the eyes ; and the breaſts grow turgid. At the approach of it, or a few days before, ( the foregoing ſymptoms continuing ) ſhe

feels a pain about the loins, groins, and pubes, attended with an uneaſineſs, and ſenſe of bearing down. In ſome, the approach is indicated by a tumefaction of the labia pudendi; tenſion, heat, and ſenſibility of the vagina; piles, frequent inclination to make water, and a heat in urine.

They for the moſt part break forth pretty copiouſly, not only at the firſt eruption, but afterwards, with a freſh red colour, which continues three or four days, and then changes paler by degrees. I have known inſtances, however, where they obſerve this progreſs for about a week, and then change red, and go entirely off the ſame day.

The quantity diſcharged at each period, differs very much in different women, and in different climes. But in this county it is uſually from two to ſix ounces. Dr. Denman, in a late publication called Introduction to the Practice of Midwifery, treats this ſubject in a very ingenious and explicit manner. He ſays, "In Greece, and other hot "countries, girls begin to menſtruate at eight, nine, and ten years of "age; but advancing to the northern climates, there is a gradual pro-"traction of the time, till we come to Lapland, where the women do "not menſtruate till they arrive at mature age; and then in ſmall "quantities, at long intervals, and ſometimes only in the ſummer.— "In this country, he ſays; Girls begin to menſtruate from the four-"teenth to the eighteenth year of their age; and ſometimes at a later "period, without any ſigns of diſeaſe. But, if they are luxurioufly e-"ducated, ſleeping upon down beds, and ſitting in hot rooms, men-"ſtruation commences at a more early period.—At the time of their "firſt beginning to menſtruate, he ſays, Their complections are im-"proved; their countenances more expreſſive and animated; their "attitudes graceful; and their converſation more intelligent and agree-"able. The tone of their voices become more harmonious; their "whole frame, but particularly their breaſts, are extended and "enlarged; and their minds are no longer engaged in childiſh fears,

purſuits,

" purſuits, and amuſements". The appearances here enumerated, by Dr. Denman, differ, in ſeveral particulars from thoſe deſcribed by me. Yet, to ſay that they are not real facts, would be wrong. I make no doubt of his having obſerved them; nevertheleſs I am led to believe that, they will be more frequently met with, after the menſes have become regular, than at the time of their commencement. But to return; he ſays, " The quantity of blood diſcharged at each evacuation " depends upon the climate and conſtitution, and it varies in different " women in the ſame climate, or in the ſame women at different peri- " ods; but there is a common quantity, to which, under the like cir- " cumſtances, women approach, and it may be eſtimated in this man- " ner : Suppoſing the quantity to be about eighteen ounces in Greece, " and two ounces in Lapland, there will be a gradual alteration be- " tween the two extremes, and in this country it will amount to about " ſix ounces."

Beſides, what Mr. Hunter has obſerved with reſpect to the quality of this flux, there are circumſtances, which vary in different women; as for inſtance, if a woman is very healthy, the whole maſs of blood conſequently good, the flux will appear of a freſh red colour; but if ſhe is unhealthy, the blood and other juices conſequently poor, or become acrimonious, the flux is uſually more pale, and its ſmell more diſagreeable, in proportion to the degree of the acrimony of the fluids. Quality.

As there is ſome degree of fœtidneſs, eſpecially in the declenſion, and chiefly obſervable in women of a groſs and corpulent habit, it has been thought that there is ſomething pernicious in their quality; but this is an abſolute error.

The natural period and appearances of the catamenia being now finiſhed for this time, the woman finds herſelf relieved; her countenance becomes bright and lively; her appetite better; her breaſts ſubſide;

ſubſide; the uneaſineſs and pains are gone; and ſhe enjoys health till a day or more before the next period: when the previous ſymptoms, but not in ſo great a degree, and then the catamenia, come on, continue, and go off as they did before.

§. II. When they begin early among us, they uſually ceaſe about forty; or even if they begin at puberty, and the woman happens to have many children or miſcarriages, they will ſometimes leave off at forty.

There are ſome women, eſpecially thoſe who are very corpulent, that have them ceaſe as early as thirty, and yet enjoy a tolerable ſtate of health.

On the contrary, ſome have had them to the age of fifty or ſixty, and at theſe years have born children. Nay, ſome authors have inſtanced women who have had them regulary to the ſeventieth year of their age.

When they begin later than the uſual time of puberty, as for inſtance, about eighteen or twenty, they commonly continue to upwards of fifty.

Some have a diſcharge in place of them, not from the uterus, but from ſome other parts of the body; and others never have them at all. Theſe ſcarcely ever enjoy a good ſtate of health.

As to their periods, ſome have them every fortnight; that is, fourteen days of intermediate ſpace. Others only in five or ſix weeks; and others more irregular than theſe, eſpecially near the time of their firſt eruption, after miſcarriages, ſometimes after mature childbirth, and almoſt always towards that time when they finally ceaſe.

Their quantity varies alſo very much, not only in different women, but often likewiſe in the ſame perſon at different times; eſpecially

cially after miſcarriages, accidental obſtructions, and towards the approach of the final ceſſation. Sometimes they return in very ſmall quantities, and at very uncertain periods. At other times they ſtop for two or three periods, and then come on ſo copiouſly as to reſemble a a flooding, even coagulating into clots, which make the woman, and thoſe about her, imagine that ſhe has miſcarried.

As to different women ſome have them in a leſs quantity than one ounce; which, changing in colour, and quality, degenerates into a ſerous diſcharge, often reſembling the fluor albus.

And finally, ſome have them in a larger quantity than ſix ounces, and yet enjoy health.

Cauſes of barrenneſs &c.

Women who have them to flow from particular parts of the body, and not from the uterus; ſecondly, who have them not at all; thirdly, who have them of a bad quality, and too ſmall a quantity; fourthly, thoſe who have them too frequently; and fifthly, ſuch as have them too copiouſly, although the quality may be good, are liable to barrenneſs; for if they happen to conceive, they are apt to miſcarry. Nevertheleſs, I will not deny, but that under ſome of theſe circumſtances, women may be found who are prolific, though I believe they are but few.

It cannot ſeem ſtrange, therefore, that many women are not prolific, eſpecially if we candidly conſider how often they are miſmatched; and how often the deficiency may happen on the male ſide, either ariſing from ſome natural fault in the organs themſelves, or from an unhealthy ſtate of the ſemen, or from both together, brought on by diſeaſes, &c. which defects may probably equal, if not exceed, thoſe that happen on the female ſide.

CHAP.

## CHAP. VII.

## OF CONCEPTION.

MAN, during this embodied ſtate, is unable to find out the original cauſes of things; or even to proceed far in the knowledge of effects, which, though ſometimes taken for cauſes, prove often to be only the effects of other effects. It is therefore no wonder that the mode of generation remains ſo little underſtood, notwithſtanding the reſearches of the curious and inquiſitive in almoſt every age.

Some may ſay, and perhaps juſtly too, that ſuch a diſcovery would be but of little uſe to mankind in general. Granting this, however, ſuch enquiries muſt be allowed to be both curious and intereſting; and as it is impoſſible to determine how far they may be purſued with ſucceſs, by repeated and accurate obſervation, it will not, I hope, be deemed preſumption in me, to lay before the public what I think upon the ſubject. I ſhall not take up the reader's time with a particular detail of each theory that has been raiſed upon it, but content myſelf with laying before him a ſhort view of the principal opinions concerning it, together with ſuch facts as ſeem to be well atteſted by authors of eminence, and tend to illuſtrate it; after which, I ſhall deliver my own ſentiments as the reſult of the whole.

Firſt opinion. §. I. The opinion of the ancient philoſophers concerning conception, was, that the male ſeed alone was capable of forming the fœtus; and that the woman only gave it lodging, and ſupplied it with blood, neceſſary for its nouriſhment in the womb, after it was entirely formed.

§. II. The

§. II. The ſecond and more common opinion was, that the fœtus was formed by the mixture of both ſeeds in the womb, either by a virtue unknown, or elſe by an arrangement of their particles in manner following: The ſeed being received and contained in the bottom of the womb, the orifice ſhut of itſelf, after which the ſeed being embraced and preſſed by the womb, all its particles began to take their parts; the moſt ſubtile continued in the centre, and by conſequence the groſſer and ſuperfluous parts were thruſt towards the ſurface, where they produced the after-birth, the navel-ſtring and the membranes in which the fœtus was contained. In the mean time, all the particles calculated for forming the different parts of the body, diſengaged themſelves by the force of their motion, and either joined or parted according to their mutual conformity or diſparity, ſo that thoſe ſuited for the head aſſembled where that part was to be, and thoſe for the reſt of the body at their reſpective places. Second opinion.

§. III. The third opinion, to which the two former gave place began in the ſixteenth century, by the diſcovery of veſicles, or eggs in the ovaria or female teſticles, and by ſome fœtuſes being found in the abdominal cavity and fallopian tubes, &c. Third opinion.

According to this opinion, the female teſticles were like a bunch of grapes or a bee-hive; they conſiſted of veſicles, each of which had a ſtalk ſo that it might be diſengaged without hurting the reſt, or ſpilling the liquor it contained; each veſicle contained a little animal, almoſt compleat in all its parts, after the ſame manner as the eggs of fowls; the vapour of the male ſeed which bedewed the womb, being conveyed to the teſticle, it ſwelled that veſicle which appeared neareſt to maturity, or was moſt ſuſceptible of fermentation; and that veſicle having diſengaged itſelf from the ovarium, fell into the cavity of the tuba fallopiana, which conveyed it immediately to the womb; in which it ſhot out ſmall roots, like an ear of corn

ſown in tilled ground, which roots, in conjunction with thoſe that ſprung from the womb itſelf, formed a large texture of veſſels, called the placenta, by which it received the neceſſary blood for its growth and nouriſhment, the ſurplus being returned to the mother.

According to this opinion, the woman furniſhes all the neceſſary ſeed for forming the fœtus, and gives it not only lodging, but nouriſhment for nine months; whereas the man contributes only ſpirits, which animate and fæcundate the egg by touching it*.

Fourth opinion.

§. IV. About the latter end of the ſixteenth century, Lewenhock having diſcovered animalcula in the male ſemen, a new theory was raiſed, which is not entirely exploded, as may be ſeen in the writings of ſome late authors. According to this theory, the ſemen maſculinum being emitted from the penis into the cavity of the uterus, it from thence paſſes into the tuba fallopiana, and by that tube one of the animalcula finds its way to the ovarium, into the ſubſtance of which it penetrates, and then enters into one of the ova. The ovum being now pregnant with this little animal, is ſqueezed from its huſk through the coat of the ovarium, and, as it paſſes forth, is ſeized by the fimbriæ, which conduct it into the tube, and by this tube it is conveyed into the cavity of the uterus, where, abſorbing the ſurrounding fluids by the extremities of thoſe veſſels on its ſurface which were opened by its detachment from the ovarium, it is there nouriſhed to the time of its birth.

This theory is really ingenious; yet, as Dr. Smellie obſerves juſtly, it is attended with circumſtances hitherto unexplicable; namely, the manner in which the animalculum gains admiſſion into the ovum, either while it remains in the ovarium or ſojourns in the tube, or is depoſited in the fundus uteri; and the method by which

* Dionis on the generation of man.

the

the veſſels of the navel-ſtring are inoſculated with thoſe of the animalculum.

§. V. Beſides, it is the opinion of the moſt learned men in this age, that theſe animalcula are only the organic parts of matter. (Mr. Needham is ſaid to be the diſcoverer of this.) Amongſt others, who are of the ſame opinion, we find Linnæus and M. de Buffon, the latter of whom has wrote elegantly and ingeniouſly on the production of animals and vegetables, (Hiſt. Nat. tom. II. chap. 2, 4, and 6.) I wiſh I could ſay alſo impartially. For, if I miſtake not, he has neither treated Graaf nor Harvey with candor.

The ſubſtance of what this gentleman advances appears to be this: The ſubſtance of M. de Buffon's theory.

" 1°. That animalcula, ſo called, are not animated, but mere machines, " or organic parts, fit to compoſe an organized body. 2°. That fe- " males have a ſeminal fluid, in which animalcula appear, as well " as in that of the males. 3°. That this fluid is found to exiſt in " both the veſiculæ of the teſtes, and in the glandulous body. " 4°. That no egg exiſts in the teſtes *, becauſe it is not to be " found. 5°. That this female ſemen, iſſuing from the nipple of " the glandulous body, continually moiſtens the cornua uteri; and " can eaſily penetrate the ſame, either by the ſuction of the texture " of the cornua, which though membranous does not fail to be ſpongy, " or through the little opening in the extremity of the cornua. " 6°. That as the female ſeminal fluid contains fewer organic parts " than the male; it happens (ſays he) there is about a ſixteenth " more male than female children: and the ſame cauſe produces the " ſame effect in all the other animals, in which one has been able to " make the obſervation. 7°. That conception takes place in the " cavity of the uterus, by a mixture of the ſeeds of the male

* I ſuppoſe he means the ovaria.

" and female, and that if the organic parts of the male ſemen
" exceed thoſe of the female, a male fœtus will be produced,
" and vice verſa. 8°. That the natural place for the human
" fœtuſes is in the cavity of the uterus; but they may be formed
" in all parts where the two ſeminal fluids can unite, as in the
" tubæ, not impoſſibly in the ovaria, and often perhaps in the va-
" gina, though they cannot be retained there. 9°. As an argument
" againſt the notion that ova are conveyed from the ovaria to the
" cavity of the uterus, he ſays, if this was the caſe, moſt fœtuſes
" would be found in the abdomen, inſtead of the uterus, for the
" upper extremity of the tube being ſeparated from the teſticle, the
" pretended egg ought frequently to fall into the cavity of the ab-
" domen; this happens (ſays he) exceeding rarely, and I do not
" know that it is true, that it has ever happened in the manner we
" are ſpeaking of. I imagine, the extra uterine fœtuſes have eſcaped
" by ſome accident, either from the tubes of the uterus, or from
" the uterus itſelf. And 10°. That all the parts of the fœtus exiſt
" at once, and that it is only the developement of them that is
" ſucceſſive."

There are ſome of this gentleman's thoughts which are truly ingenious; particularly thoſe concerning the animalcula, and the ſucceſſive developement of the parts of an embryo. But how far his aſſertions, that no ovum can be found in the ovarium, that the female ſeed can paſs ſo readily from the ovaria into the cavity of the uterus, to meet that of the male, in order to perform conception; that the fœtus being there, ſhould be ſo cunning a little being, as to ſlip away through the fallopian tubes into the cavity of the abdomen, &c. are reconcileable to the following facts, I muſt leave to others, who are much more able than me to judge.

§. VI.

§. VI. Dr. D. Monro has given a caſe in Smellie's ſecond volume, page 14, wherein a girl of fifteen years of age, having ſeveral times had periodical ſymptoms of the catamenia without its appearance, applied to his father, who, making enquiry, found the os vaginæ was entirely cloſed by the hymen. The hymen being opened by the lancet, three pints of thick blood was diſcharged, and ſhe did very well afterwards. Hiſtory I.

Dr. George Macaulay gives another caſe in the ſame volume, page 15, of a young woman about nineteen years of age, whoſe os vaginæ was alſo entirely cloſed by the hymen. Upon dividing the hymen with a lancet, about two quarts of thick black blood were diſcharged, and after that ſhe did very well. Hiſt. II.

In 1750, I was preſent, when Ceſar Hawkins, Eſq; ſerjeant ſurgeon to his majeſty, divided the hymen of a little girl by the ſciſſars, which hymen covered the os vaginæ, all except a little hole which admitted the end of a probe. Caſes of this kind have happened ſo often, that to inſtance more of them would be needleſs here. Hiſt III.

Mauriceau, in his 489th obſervation, has given a very remarkable account of a woman who conceived, and was delivered of a child, although her hymen had not been broke in coition. Hiſt. IV.

Ruyſch (tom. I. obſervat. 22.) has given another remarkable caſe, wherein he was called to a woman in labour, whoſe hymen was intire, and prevented the delivery of the child, by whoſe head it was diſtended. An inciſion being cautiouſly made, he perceived another thick membrane farther in the vagina, which being alſo opened, the woman was delivered. Hiſt. V.

Hildanus, in centuria III. obſerv. 60. gives another caſe nearly ſimilar to the two preceding, namely, a young woman at Paris, who being married, could not admit the embraces of her huſband, who on that account ſued for a divorce; but as ſhe ſuſ- Hiſt. VI.

pected

pected herſelf with child, ſeveral eminent ſurgeons examined the parts, and found the entrance to the vagina ſhut up by a ſtrong callous membrane, in which were ſmall openings, ſufficient to allow the menſtrual diſcharge.

This membrane being divided, and by proper applications kept open, the huſband was ſatisfied, and the woman was in ſix months ſafely delivered of a full grown child.

§. VII. Now, ſeeing there are ſuch proofs as theſe, that the os vaginæ, in ſome women, is intirely cloſed by the hymen; and that ſome, who had it thus cloſed, did conceive without having the hymen broke by coition; therefore could not have the penis admitted into the vagina; hence could not receive the male ſeed into the cavity of the womb, to form the fœtus according to the firſt opinion; to be mixed there with the female ſeed according to the ſecond opinion; to bedew the inſide of the womb, and from thence impregnate the ovum, in the ovarium, according to the third theory; nor to be conveyed to the ovaria by means of the fallopian tubes, according to the fourth and preſent opinion, it may fairly be aſked, how did theſe women receive the ſemen maſculinum? I anſwer, by abſorption. Some of it, in the laſt caſe, might indeed probably paſs through thoſe holes, which were found in the hymen, to the cavity of the vagina, but the os tincæ being ſo far diſtant, it is highly improbable, that any part of it was ſo effectually emitted as to reach that orifice, much leſs the cavity of the uterus.

This notion of abſorption, may ſeem, perhaps, at firſt a little ſtrange; but if we will only attend to ſome other circumſtances which have happened, and to other effects which are daily produced in the human body, there will, I apprehend, appear ſome probable reaſons to ſupport it.

§. VIII.

§. VIII. Harvey ſpeaking of does (anatom. exercit. page 413.) ſays, Having made ſeveral diſſections in the Month of October, as well before the expiration of the rutting time, as after, I could never find any ſeed, or blood, or the track of any other thing within the cavity of the uterus.

In page 417, he ſays, that, by the king's deſire, a dozen of does were ſeparated from the bucks at the beginning of October, the time of rutting being then not paſſed; and having diſſected divers of thoſe does, he diſcovered no ſeed at all reſiding in their uteruſes; and yet thoſe whom he diſſected not, did conceive by virtue of their former coition, and did fawn at their appointed time. In bitches, conies, and ſeveral other animals, he obſerved alſo, that nothing remained in the uterus, after coition, for many days together.

Regn de Graaf, having diſſected rabbets at different times, from half an hour after coition to the twenty-ninth day (De mulierum organis, cap. XVI.) amongſt many other curious obſervations, ſupplies us with the following:

Half an hour after coition, he found neither ſeed nor any thing which reſembled it, in either the vagina or uterus; the horns of the uterus ſeemed a little reddened, but the eggs in the ovaria were not as yet changed, unleſs it was a very little, from their limpidneſs.

In the ſixth hour there was not the leaſt appearance of ſeed.—But the folliculi of the ova in the ovaria, were changed red. In another, twenty-ſeven hours after coition, he found that the fimbriæ of the fallopian tubes embraced the ovaria; but having diſſected the horns of the womb, he did not find that any ova were yet arrived. Seventy-three hours after coition, the ovaria were ſtrictly embraced by the infundibuli of the fallopian tube; in the right tube there was now one egg, and in the right horn of the uterus there were ſeveral eggs. And in another rabbet, four days after coition, he found eggs in both horns of the uterus.

§. IX. Every

§. IX. Every medical practitioner knows, there are ſubſtances of different kinds; as for inſtance, of the alimentary, medicinal, and morbid claſſes; which being applied to parts on the ſurface of the human body, are abſorbed, and taken up by the circulating fluids, becauſe their effects appear at places very diſtant from thoſe where applied. Can we think it leſs probable then, that the ſemen ſhould be abſorbed through the pores of the foſſa magna; and when mixed with the circulating fluids, have, by their courſe, a peculiar tendency towards ſuch ovum, or ova, in the ovaria, as are ready for fecundation; eſpecially as it is a fluid deſigned by nature for that purpoſe? Surely not.

But granting that it has been thus conveyed to the ovaria, and has, either by means of circulation alone, or aided by another abſorption, entered through the coat of ſuch an ovum, and mixed with its contents; yet, what ſhall be ſaid of the next ſtage (if I may ſo term it) of conception; namely, how, or in what manner can the contents of this ovum be ſo changed by the preſence of the male ſeed, as then, and not 'till then, be enabled to range themſelves into the reſpective parts of an animate body? My attempting to anſwer this queſtion, may be judged by many too aſſuming:—yet, relying on the candour of my readers, I will venture to offer ſome ideas which have preſented themſelves to my mind; whether they are new or not, I will not take upon me to decide, as I have not time to read the books of many authors.

Firſt, In all bodies, whether animal, vegetable, or mineral, there appears to reſide a ſomething ſuperior to matter; not only during their native ſtates, but even after diſſolution, and the action of a very powerful fire, they are found poſſeſs'd of affinity, attraction, repulſion, and the power or property of acquiring new forms, magnitudes, colours, &c.—Whether this ſomething may be called ſoul or ſpirit, or affords any efficacy towards the commencement of the ſpirituous

part

part of animated body, I cannot take upon me to decide; though it may be ſo.

Secondly, That the firſt parents of every kind and ſpecies of, (at leaſt) animals, muſt have been endowed at their firſt creation, with a ſpecific power to convey, in time of conception, the ſpiritual part called ſoul, as well as the corporeal part called body.—Had it not been ſo, we muſt then ſuppoſe, that the ſpirits of all animals were created at the beginning of the world, and ſince that time kept ſomewhere in reſerve for their embodied ſtates; or that every new production muſt require a new creation!—which ſuppoſitions, in my humble opinion, would be too abſur'd, if not impious, to be admitted.—Now ſhould it be allowed, that the parents, either the male ſingly, or conjunctly with the female, have power to convey the ſpiritual part, as well as the corporeal, then I hope the arrangement of the conſtituent particles, to form an embryo in the ovum, will be better underſtood, not only from what has been already ſaid, but from what follows.

§. X. We ſee eggs of the bird kind, which, having been impregnated by the male of their own ſpecies, produce birds as prolific as their parents. Whereas, thoſe which are not fœcundated by the male, though known to have all the viſible parts that can be ſeen in the others which have been impregnated, produce nothing.

We ſee alſo the mature females of quadrupeds, &c. having veſicles or eggs in their ovaria, which being impregnated with the male ſeed of their own ſpecies, produce animals as prolific as their parents; Whereas others, that are not impregnated, produce nothing. And moreover, that ſuch animals as are capable of being impregnated by the male of another kind, as an aſs by an horſe, &c. the animal thus unnaturally produced, though furniſhed apparently with the organs of generation,

yet wants the prolific quality, and conſequently cannot propagate.

But in the breed of male and female of different ſpecies of the human kind, as for inſtance, a white european man, and black african woman; alſo amongſt brutes, viz. a britiſh fighting cock, and tame hen; an arabian horſe, and dull engliſh mare, &c. the prolific power ſtill continues; and there is a peculiarity in the temper of the mind, and figure of the body of this offspring, which ſeems to indicate, that it did alſo receive the mental part, as well as corporeal, from the parents. Beſides, comparing the contents of any bird's egg, not impregnated with ſuch as have been fœcundated; in the former, there are ſeemingly all the materials provided by the female to form the chick; ſo that the prolific touch of the cock is only wanted for animation. However, it is evident, in the human kind, that the male conveys ſome matter, ſeeing that ſuch diſeaſes as ſcrophula, gout, &c. are conveyed from a man to his children.

In the vegetable kingdom we may alſo obſerve, that the ſeeds which are fœcundated with the male farina, produce plants endued with the ſame properties as their parents; whereas, ſuch as have not been fœcundated, produce no ſucceſſion, although they appear to have every part that can be ſeen in thoſe which are. But in this work of vegetable conception or impregnation, whether the farina mixes with the contents of the female ovum or ſeed, and affords an equal ſhare in forming the germ or embryo of the new plant? Whether the germ is only a particle of the farina; and conſequently has no more than cloathing and nouriſhment from the ovum? Or, whether the ovum furniſhes the rudimental parts chiefly of the new plant; and conſequently requires little more (if any thing at all) than the prolific touch or vegetable principle from the farina, whereby its prolificneſs may be conveyed on by a ſucceſſion? are points which botaniſts (whoſe reſearches in this age have far exceeded thoſe before them) are beſt able

able to decide. As to me, judging from my own obſervations and thoſe of others, ſeveral inſtances, I think, may be given, in both the animal and vegetable kingdoms, ſerving to prove, that in the act of generation of one ſpecies, the female receives only from the male the prolific touch; and in that of another, ſome corporeal part alſo. There may, however, ſome objections ariſe, concerning this generative contact made by the ſeminal parts of the male and female, in order to produce a new plant; ſeeing that ſections of the elder, poplar, willow, &c. and the polypus alſo (which partakes of this kingdom) can grow into the forms and magnitudes of thoſe from which they were taken; and appear to us to have the ſame properties*. But if we reflect on the many prodigies of nature, we cannot think it ſtrange that thoſe bodies ſhould have a power peculiar to themſelves, to convey their prolific qualities down even to ſeveral generations, without renewing this generative contact of ſeminal parts. Yet I am inclined to think, that if the ſeminal organs of thoſe plants, which are produced from ſections, were taken off for a few years, before the times of their maturity, and then ſections taken from them to produce new plants, that thoſe ſections would, in time, loſe the prolific or reproductive power, and conſequently die.

However, leaving much to future diſcovery, let us turn to the next ſtage of animal generation, where we meet with more perſpicuity; namely, that the ovum is fœcundated before it leaves the ovarium; and that, according to the ordinary courſe of nature, it is then conveyed by the fallopian tube to the cavity of the uterus, where the formation of the fœtus is afterwards compleated.

I ſay, according to the ordinary courſe of nature; for inſtances have occured of fœtuſſes being formed in the ovarium, ſome found

* Beſides theſe, we may inſtance the aphis or pueron, which is wholly of the animal kingdom.

in the cavity of the abdomen, and others in the fallopian tubes. Which incidents, although out of the ordinary courſe, have thrown more light upon this ſubject, than could ever have been extracted from theory; as may be obſerved by only the few following particulars:

§. XI. M. de Maurice, in the philoſoph. tranſ. No. 150. page 285. gives the hiſtory of a woman, in whoſe abdomen, after death, he found a male fœtus perfectly formed, about the bigneſs of a man's thumb, which had, juſt before her death, made its way into the cavity of the obdomen, by burſting the coat of the right ovarium. This teſticle or ovarium, he ſays, was about the bigneſs of a hen's egg, and the laceration was longitudinal on that ſide which did not touch the tube. Both this tube, and the tube of the ovarium of the left ſide were in the natural ſtate.

Dr. Fern, in philoſoph. tranſ. No. 257. page 125. ſays, that in diſſecting the body of a woman, who ſuppoſed herſelf to be three months gone with child, he found the womb not larger than in virgins, and a hard ſubſtance in the right ovarium, which being opened, appeared to be the ſkeleton of an infant.

In philoſoph. tranſ. No. 231. page 314. he has given another hiſtory, namely, of a goldſmith's wife, who died in pregnancy, and being opened, there was found an entire female fœtus, contained in a cover or bag, which ſeemed to be nothing elſe than an elongation and diſtention of the tube; and an expantion or production of the broad ligament of the right ſide; which was evident from its continuity to theſe parts, and the deſtribution of the ſpermatic veſſels, which were larger than uſual, and paſſed from the extremities of the tube to the larger lump or bag.

Dr. Starkey Myddleton, in the philoſoph. tranſ. has publiſhed a moſt remarkable caſe of a child's remaining ſixteen years in the abdomen;

domen; during which time, the mother bore four living children; and after her death, the body being opened in preſence of doctors Neſbit, Nicholls, and Laurence, the ſeveral contents of the abdomen appeared nearly in their natural ſtate; but on the right ſide, within the os ilium, the child preſented itſelf attached to that ilium and neighbouring membranes, by a portion of peritonæum, in which the fimbriæ and part of the right fallopian tube ſeemed to loſe themſelves.

In the memoirs of the academy of ſciences at Paris, there is an account of a fœtus being found in the fallopian tube. See Dr. Smellie's caſes and obſervations.

§. XII. The inference which ſeems to me to ariſe moſt directly from what has been ſaid, is this; when the woman is naturally diſpoſed to conceive, that is, when ſhe is ſuſceptive of it, the ſemen maſculinum, as it emits from the penis, part of it, at leaſt, is thrown into the cavity of the uterus, from whence it readily paſſeth through the lateral orifices by abſorption, &c. into the circulating fluids; and ſuch part of it as has not entered the uterine cavity, but remained on the ſurfaces of the foſſa magna, and vagina, is abſorbed by the glands belonging to them, and hence conveyed into the blood likewiſe. When thus mixed with the current fluids, a part of both is, in courſe, carried to the ovaria; where meeting with an ovum, ready or ripe for impregnation, it paſſeth into it, as hinted in §. IX. Animation and the arrangement of parts now commences, (probably aided by the powers of affinity, attraction, repulſion, &c.) ſuch as are ſuitable to form madulla, madulla; nerve, nerves; veſſel, veſſels; bone, bones; muſcle, muſcles; and ſo to a perfect fœtus. If two or more ova happen to be ripe at the ſame inſtant, they not unuſually become fœcundated; and the woman, at the natural time brings forth as many children. The ovum being thus animalized, in a few days (as I imagine) breaks through its calix, and the coat of the ovarium alſo, to which it is naturally contiguous; and

Inference.

and as it comes forth, the fimbriæ of the fallopian tube embrace it, the orifice receives it from them, and by way of the tube it arrives in the cavity of the uterus, before the twentieth day, as I have reaſon to think, from the magnitude of ſome embryos which I have ſeen after they had been expelled from the uterus about this time. What happens during its ſtay in this cavity, ſhall be conſidered in the following chapter.

## CHAP. VIII.

Plate 4

Fig 1

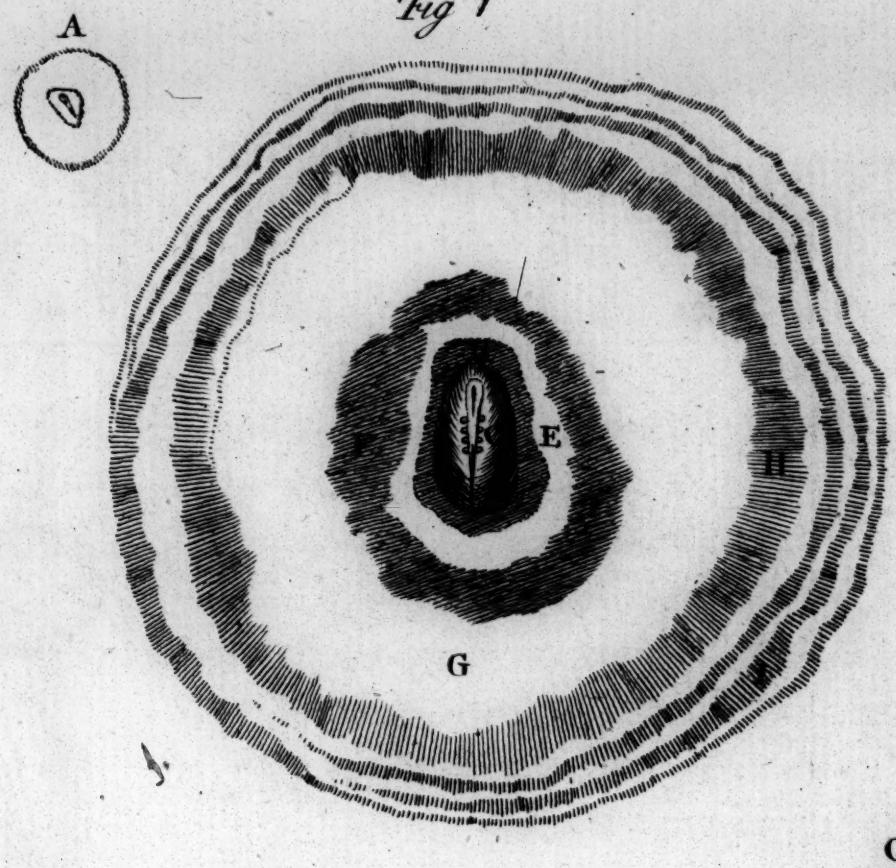


Fig 2

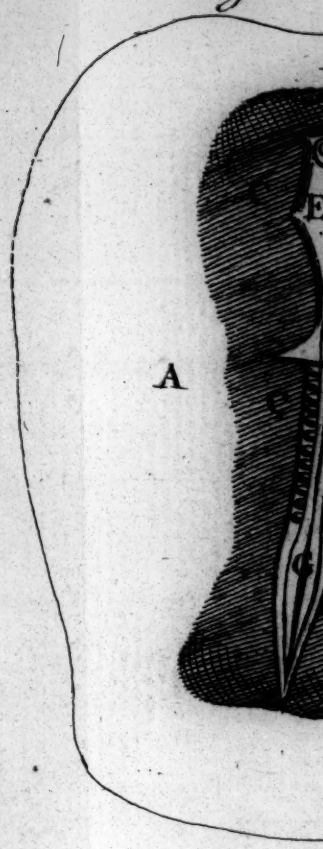

Fig 4

Fig 6

Fig 7

*Fig 2*

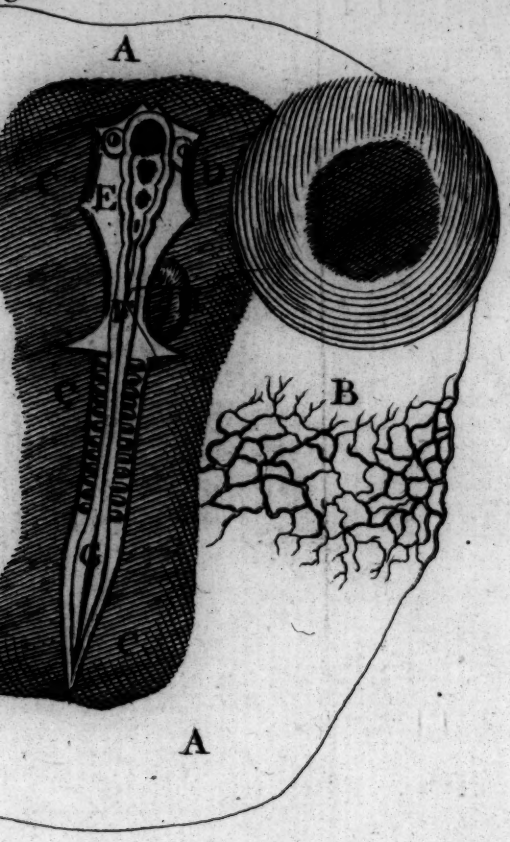


*Fig 3*

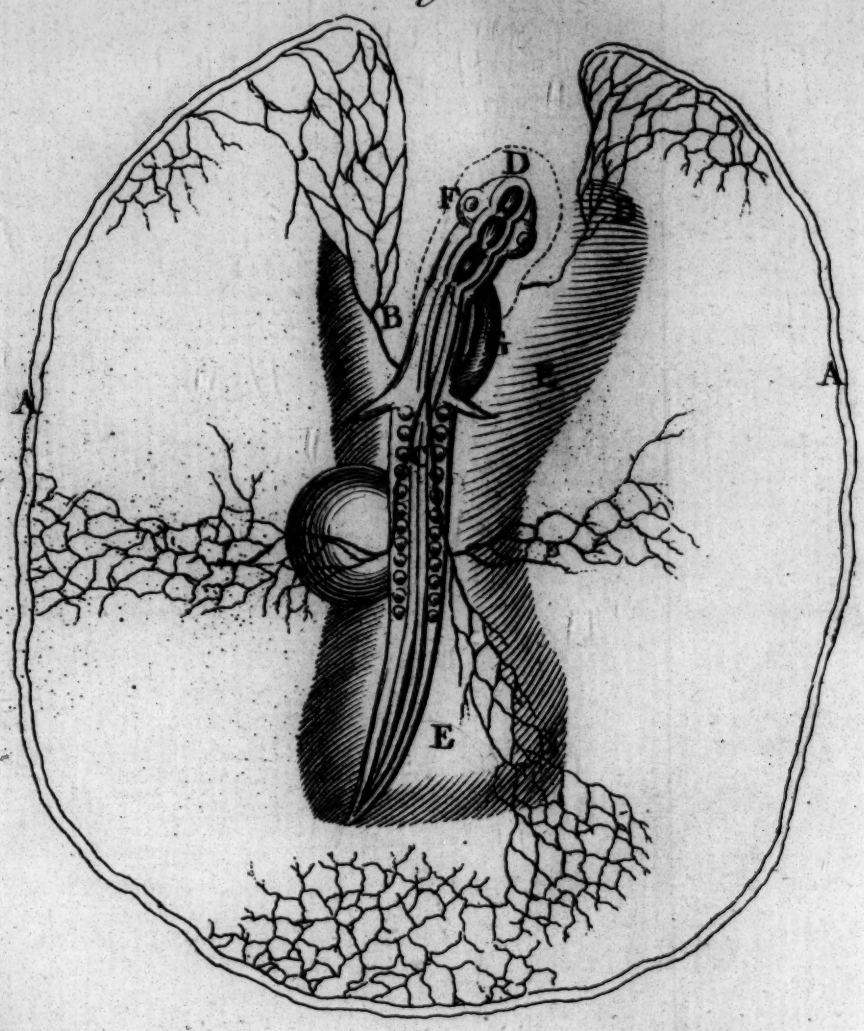

*Fig 5*

*Fig 7*

*Fig 8*

## CHAP. VIII.

## OF THE FŒTUS IN UTERO.

HAVING endeavoured in the laſt chapter to elucidate the moſt obſcure part of generation, called conception; the nutrition, formation, and the increaſe of the fœtus during its ſtay in the womb remain next to be conſidered; in order to which, I ſhall firſt deſcribe, in the cleareſt manner I am able, an ovum femininum, as it appears when diſmiſſed from the uterus, in the third month of geſtation. Secondly, give a brief account of the circulation betwixt it and the mother. Thirdly, inſtance a few facts from the teſtimonies of ſome authors. Fourthly, ſome obſervations of my own, with occaſional remarks on the whole; and then conclude, with an inference from this, and the preceding chapter.

§. I. An ovum, about the tenth week after conception, is commonly as large as a hen's egg, and nearly of the ſame figure.

Its ſurrounding parts (called the walls) were believed to conſiſt only of the placenta and two membranes, namely, chorion and amnios, until Dr. Hunter diſcovered that there are three membranes; the exterior of which he calls the membrana caduca, vel decidua, and the other two by their former names.

This external membrane, he has alſo diſcovered to be a lamella from the inner ſurface of the uterus.

In the month of December, 1765, he ſhewed me an ovum in which the lamella was extremely perfect. Its exterior ſurface was rough or ſhaggy, like others which I had ſeen; the inner ſurface was ſmooth and looſe, or detached from the chorion all round to the margin

margin of that ſpungy ſubſtance which ſeemed to be forming the placenta: but here it adhered to (or united with) the chorion; and from this part of union, the ſpungy part of its ſubſtance roſe up and reflected over the placenta, making the exterior ſtructure of that viſcus.

This membrane had three foramina, one of which correſponded with the os uteri, and the other two with the orifices of the fallopian tubes; and as a farther proof of its being a lamella as above obſerved, the doctor ſhewed me another that was falling off, or ſeparating from the inner part of a gravid uterus. I muſt own that I was ſtruck by what the doctor called the membrana caduca, having obſerved the ſame in ſeveral of the ova which I had deſcribed, as will appear hereafter.

Nevertheleſs, I with truth declare, that I did not comprehend it rightly, but imagined that it was either the originating placenta, a luſus naturæ, or a falſe formation. After the doctor explained it to me, I conceived an opinion, that it ſerved to compleat the formation of the placenta, by contracting itſelf entirely into that viſcus, towards the latter months of pregnancy: but having communicated this to Mr. John Hunter, I was happily favoured with a fuller explanation of his brother's opinion concerning it; namely, that towards the latter months of gravidity, the caduca became gradually thinner, and more connected with the chorion, but ſtill remained extended over it, and might be ſeparated from it.

To be certain of this, I examined mature ſecundines (which had been kept in water three days) in the preſence of Mr. Alexander Corſon, ſurgeon and man-midwife, March 25, 1766, and obſerved as follows:

The perforation made by the exit of the child was nearly oppoſite to the placenta. The membrana caduca, vel decidua, extended over the whole ſurface of the chorion as far as the placenta. It appeared

of

of a whitiſh colour, and was covered externally with a downy ſhagg.

At the aperture it was about the thickneſs of the chorion and amnios together, and from thence became gradually thicker, but not ſo much as to exceed one-eighth of an inch: its texture was ſpongey, yet ſo firm as to admit of being perfectly ſeparated from the chorion, every where to the edge of the placenta, where it ſtopt; and ſuddenly growing thick, denſe, and more whitiſh, it appeared to form the outer part of this edge, and then to divide quickly into two parts; the exterior of which, becoming extremely thin, extended over all the ſurface of that ſide of the placenta which lay next to the uterus. The interior portion ſeemed to terminate in white fibres or veſſels, about a quarter of an inch within the edge of the placenta; ſome running through its ſubſtance, and others adhering very firmly to the ſurface of the chorion.

The chorion was tranſparent and very thin, till it came upon the inner ſurface of the placenta, to which it firmly adhered, and became thicker. The amnios was extremely pellucid, ſomewhat thicker than the latter, and ſeparated very eaſily from it, every where to the root of the funis. By the ſtricteſt examination, there was no alantois to be found, nor was there any appearance of the little white body.

A part of the caduca being dried on paper before the fire, there appeared in its ſubſtance a few ramifications of extremely ſmall blood veſſels. Theſe veſſels were ſcarcely diſcernible near the opening which had been made by the child; but towards the placenta, they became gradually more conſpicuous. Portions of the chorion and amnios being dried alſo, no veſſels appeared in them.

From the above account, it is very evident that Dr. Hunter is perfectly right: but to return to our ſubject.

§. II. The internal parts of the ovum, are the funis, the fœtus, and liquor amnii. The walls or ſecundines, at this time, weigh uſually about half an ounce Troy; the fœtus, one ſcruple; and liquor amnii, one ounce.

Membrana caduca.

The membrana caduca is thick and ſpongey, eſpecially as it approaches to the placenta, and is interwoven with many ſmall veſſels and fleſhy fibres, which riſe up ſhaggy on its outer ſurface.

The placenta is principally (if not entirely) formed by this membrane, and at this time extends uſually over a pretty large ſpace of the chorion.

Chorion.

The chorion is a clear membrane which ſurrounds the whole ovum, and makes the inner coat of the funis. On the exterior ſurface, there riſe up here and there ſome fleſhy fibres; but the inſide is not ſo rough.

Amnios.

The amnios encompaſſes the ovum alſo, and makes the outer coat of the funis, although it is the inner of the ovum. It is a very ſtrong and tranſparent membrane: the outer ſurface is a little rough, and adheres ſlightly to all the chorion; but the inner ſurface, to wit, that which is next to the liquor amnii, and to the fœtus, is extremely ſmooth.

A little white oblong body.

There has been in many of the ova which I have inſpected, a little white oblong body, about the bigneſs of a pearl barley corn, ſituated betwixt the chorion and amnios, about an inch from the root of the funis; its ſubſtance is very firm; it is covered with a ſtrong pellucid membrane, and from one end of it, there paſſes a ſmall white chord or veſſel, to the root of the funis. This body is not to be found in every one; and, at preſent, I am ignorant of both its name and uſe.

Funis umbilicalis.

The funis umbilicalis ariſes from near the center of the placenta; it is uſually about an inch long, and as big as a ſilver probe; (though at the time of natural birth, it is commonly near a yard,

yard, ſometimes more in length, and as big as a finger in thickneſs) its ſubſtance conſiſts principally of the umbilical veſſels, namely, one vein and two arteries; and it is covered by elongations of the true chorion and the amnios, as already obſerved.

The fœtus, at this time, is for the moſt part ſo well formed, that the cavities of the trunk are cloſed; the eyes, noſe, mouth, ears, limbs, fingers, toes and privities, are all manifeſt to the eye without the help of glaſſes. Fœtus.

It is uſually about the ſize of a ſmall bee; and of a white pellucid colour, and gelatinous conſiſtence; and the head is nearly as large as all the reſt together.

The liquor amnii is a thin pellucid fluid, ſometimes tinged a little with a reddiſh colour: it has a brackiſh taſte; and, notwithſtanding what has been confidently affirmed, does not concrete or coagulate by heat like the white of an egg, but evaporates to a ſmall portion of a frothy ſediment. Various opinions have been given concerning the uſes of this fluid: ſome have maintained, that the fœtus is nouriſhed by it alone; others, that it does not ſerve for that purpoſe at all; and others, that the fœtus is partly nouriſhed by it, and partly by ſuch fluids as are conveyed by means of the umbilical vein. Liquor amnii.

Theſe controverſies have been largely diſcuſſed by Mr. Gibſon, late city profeſſor of Midwifery, and Dr. Monro, univerſity profeſſor of anatomy, both of Edinburgh (Med. Eſſ. vol. I. page 139, and vol. II. page 102.) to which moſt ingenious diſſertations I ſhall refer the reader, and only beg leave to offer the few following thoughts.

This fluid ſeems to ſerve as follows. Firſt, as a vehicle to contain and ſuſpend the rudimental particles of the embryo. Secondly, by its tenuity, to facilitate the attraction and approximation of thoſe particles, in order to form the ſeveral parts of the fœtus. Thirdly, to

defend the buds of thoſe parts during the time of their forming, ſo that they be not defaced or injured, either by coming into contact with the walls of the ovum, or by ſuffering a preſſure from them and the ſurrounding uterus, &c. which accidents, unleſs the embryo did ſwim in ſuch a fluid, could not be avoided. Fourthly, as a fotus to cheriſh and forward the growth of the embryo. Fifthly, to lubricate the ſkin, and to defend the fœtus from preſſure, when even the formation is compleated. And, ſixthly, part of it paſſing by the mouth into the ſtomach and inteſtines, will not only lubricate and moiſten the ſurfaces of thoſe parts, but alſo keep them in a due degree of diſtention, whereby their formations will be forwarded, and the unnatural cohefions prevented, that otherwiſe would enſue, without the help of ſuch a medium to keep the ſides of thoſe hollow viſcera open.

That it paſſes into thoſe parts ſeems evident, ſeeing Aldes, Swammerdam, and Dr. Flemyng have obſerved (philoſoph. tranſ. vol. 49, part I. for the year 1755, page 254.) that in ſeveral calves, which were opened before the time of maturity or natural birth, there were found ſome of their own hairs mixed with the meconium in the inteſtines.

Whether this fluid anſwers any other purpoſes than theſe, I really know not. I believe that the urine of the fœtus doth not mix with it, or in any reſpect affect, it for the following reaſon.

On the 19th of February, 1766, Dr. Hunter ſhew'd me a child, whoſe bladder, two months before the time of maturity, contained above three pints of urine, and yet the urethra was naturally open.

Veſſels. There are ſome veſſels which are pervious in the fœtus, but not ſo in the adult ſtate, viz. vena umbilicalis, ductus venoſus, foramen ovale, ductus arterioſus, and the two umbilical arteries; all of which ſhall be briefly deſcribed as follows:

1°. In the ſpongey ſubſtance of the placenta there riſes (probably) from its cells an infinite number of ſmall ſanguinous veſſels, which gradually unite into larger ones as they approach the funis, where near to its root they all join and form a large trunk, called the vena umbilicalis. This vein paſſes along the funis to the umbilicus of the fœtus, from thence to the liver, and there terminates in one ſide of the vena portarum.

2°. The ductus venoſus ariſes from one ſide of the vena portarum, nearly oppoſite to the place where the umbilical vein entered, and from thence paſſing directly to the great trunk of the vena cava, terminates in one ſide of it. Ductus venoſus.

3°. Foramen ovale is an immediate paſſage betwixt the auricles of the heart. Foramen ovale.

4°. The two umbilical arteries take their origins from the internal iliacs (ſee chap. V. §. IV.) on each ſide of the bladder, from whence reflecting back, they paſs directly to the navel, and from that along the funis to the placenta, where they divide and ſub-divide into many branches, moſt of which terminate by anaſtomoſing with branches of the umbilical vein. Umbilical arteries.

Theſe being rightly conſidered, the nutrition of the fœtus, and the circulation between it and the mother, will be comprehended as follows.

§. III. When the ovum has paſſed through the fallopian tube, (at which time it cannot be ſuppoſed to be larger than a pea of a ſmall ſize, conſidering the capacity of that tube) its exterior ſurface comes then into contact with ſome part or other of the inner ſurface of the uterus, uſually on one ſide near to the fallopian orifice, at which place of appoſition the villi of both ſurfaces adhere ſoon, or begin to inoſculate, and the ovum to imbibe a lymphatic moiſture, till the veſſels of the placenta are ſo formed, as to admit the red globules The circulation between the mother and child explained.

bules of blood; after which time the originating placenta and caduca ſerve awhile as a filter to ſeparate the lymphatic or pellucid parts from the ſanguineous, in order to ſupply the embryo. Becauſe, even when formation is compleated, there is commonly not the leaſt appearance of red globules to be ſeen in any part of the fœtus.

The fluid refined thus from thoſe, which were derived from the uterus of the mother, is principally conveyed to the originating fœtus or embryo by the umbilical vein; and what is not immediately taken up in the accretion of rudimenting parts, mixes with the liquor amnii, and ſerves to ſupply that fluid, &c.

I ſay principally, for ſome part of this fluid paſſes from the ſpongey chorion (or caduca) immediately through the ſubſtance of the true chorion and amnios, ſeeing the fluidity of the liquor amnii is uſually maintained after the fœtus is formed, to the time of natural parturition.

Now, as the fœtus acquires form and bulk, a greater quantity of nutritive fluids will be required from the mother, and when its formation is compleated, a part of thoſe fluids will conſequently be ſent back from its heart by the umbilical arteries to the placenta; and from thence ſome of this part taken up by the circulating fluids of the mother, in the manner as ſhall be explained hereafter.

During this early ſtate, it is not improbable that the walls of the ovum ſhould abſorb thoſe fluids from the orifices, deſcribed in chap. V. §. VIII. ſeeing no arteries (that I know of) have been obſerved to terminate upon the inner ſurface of the uterus before pregnancy: and allowing thoſe terminations to be found even ſo early as the third month of geſtation, (which I believe to be ſeldom the caſe) and the nutritive juices to be conveyed by them to the ovum, how will the coheſion at this time ſupport the impetus of the blood

blood from thoſe arteries? if it cannot, a ſeparation muſt enſue, and hence abortion.

But after this time, the ovum enlarges; the placenta adheres firmer, and grows conſiderably thicker; ſo that its ſpongey texture is very probably ſoon adapted to receive into its cells the fluids from the extremities of arterial branches, without loſing its adheſion; and now the lateral orifices of the veins become fit to receive thoſe fluids from the placenta, which are to paſs from the fœtus to the mother; from which increaſing ſtate of circulation it is evident how ſome of the arterial branches, which before were ſcarcely pervious, grow now capacious enough to permit the red globules of blood to paſs through them to the placenta.

As a farther explanation, I ſhall beg leave to inſert what follows, for which I am indebted to my friend Mr. Hunter.

"The communication between mother and child is by means of the "placenta. The placenta is a ſpongey body, whoſe ſpongey ſurface "adhering to the inner ſurface of the uterus, the arteries of the uterus "open, and throw their contents into its cells. In the ſame manner "do the veins of the uterus open from thoſe cells, and the blood "from the placenta paſſes into them, and is carried to the heart of "the mother. Here then is a circulation of blood through the cells "of the placenta, as in the corpus cavernoſum penis. But, beſides "this, there is another circulation in the placenta by means of ar-"teries from the child, which ramify through theſe cells and correſ-"ponding veins, that carry the blood back to the fœtus, perhaps with "the additional blood that was abſorbed from the arterial blood of "the mother."

Whilſt the placenta adheres to the uterus, and is thus ſup-plied with fluids from the mother, thoſe fluids are imbibed or taken up from its cells by the ramifications of the umbilical vein, which convey

convey them with the exterior current fluids into the trunk of that vein, and by it they are carried to the vena portarum.

The vena portarum ſends a part of them immediately through the liver along with the interior portion of fluids which belongs to that viſcus, and the other directly on to the vena cava by means of the ductus venoſus.

The vena cava aſcendens meeting with the vena cava deſcendens, and forming but one trunk, they are poured by that, with the reſt of the current fluids, into the right auricle of the heart, and from thence a conſiderable part of them thus mixed paſſes through the foramen ovale, immediately into the left auricle, from that into the left ventricle, and by that ventricle into the great aorta, without ever paſſing through the lungs. The remaining portion, which did not paſs through the foramen ovale, paſſes from the right auricle into the right ventricle, and by that into the pulmonary artery, which conveys about one half only of this portion to the lungs. For, as it is thrown by the ventricle into this artery, about one half of it paſſes through the ductus arterioſus, directly to the great aorta; hence ſcarcely a third part of the current fluids paſſes through the lungs of the fœtus.

This portion, which was ſent to the lungs, is brought back by the pulmonary vein, and poured into the left auricle of the heart, where, meeting with that portion which paſſes continually through the foramen ovale; both are then thrown, by that auricle, into the left ventricle, and by that ventricle into the great aorta; which diſtributes them, as in the adult, to all the other parts of the body, and as follows:

As part of theſe fluids paſs on to the lower extremities, a conſiderable portion of them is taken off by the umbilical arteries, and carried to the placenta, where ſome of this portion is conveyed into branches of the umbilical vein; and the other portion paſſing from the

the extremities of the remaining branches, into the cells of the placenta; it is then abſorbed or taken up by the venal orifices, and mixed with the current fluids of the mother, as above obſerved.

All the fluids of the fœtus, except this portion, are conveyed back to the heart by the veins of the body, as in the adult ſtate, but this portion by the vena umbilicalis, &c: as above deſcribed.

From what hath been ſaid, the fœtus appears to have three circulations, namely, one by abſorption, between the uterus and placenta, one between the placenta and the fœtus, by means of veſſels, which I have taken the liberty to call the exterior; and one within the fœtus, called the interior.

Beſides theſe, it ſeems probable that about a fourth part of the current fluids of the fœtus paſſes through the placenta; another fourth through the lungs, and the other half through the reſt of the body.

The reciprocal increaſe of the ovum and uterus will appear alſo, if we conſider, that as the former enlarges, a greater quantity of fluids will be derived from the latter; in conſequence of which, an accelerated circulation will ariſe, not only between theſe, but alſo between them and the heart of the mother; which increaſing, will occaſion the veſſels of the uterus, ſome of which before were either impervious or not large enough to convey red globules of blood, to ſtretch a little from their ſerpentine courſes, and enlarge in their diameters ſo greatly, as to maintain the uterus in its ſameneſs of thickneſs, although its capacity is ſo large in the latter months.

But when the birth enſues, derivation and diſtention are both taken away at the ſame time; conſequently the veſſels contract; and ſome of them, probably, collapſe again; ſo that by the third week, the magnitude of the uterus is ſeldom larger than it was at the third month of geſtation.

Having now conſidered what was propoſed concerning the nutrition of the fœtus, and the circulation between it and the mother, I beg leave to mention a few things which I have met with in authors concerning its formation.

De natura pueri, ſect. iii. p. 238. 30.

§. IV. Hippocrates ſays, that the male infant is formed in thirty days, and the female in forty-two.

In ſect. IV. page 347—30. ſpeaking of the manner in which the fœtus is formed, he ſays, that the members are all diſtinguiſhed and increaſed at the ſame time; neither is one ſooner or later than another. Thoſe, however, which are naturally the largeſt, are diſcovered before thoſe which are ſmaller, though indeed they do not exiſt one moment before the ſmaller.

And yet the members of every fœtus are not formed always in the ſame order, or in an equal ſpace of time; but ſome quicker, and ſome ſlower, according as they have allotted to them different degrees of heat and nouriſhment.

De gen. an. l. i. c. 2.

Ariſtotle ſays, that the male hath the pre-eminence in the original of the motus and generation; the female in the original of the matter. The ſoul, therefore, proceeds from the male, and the body from the female. For (ſays he) the ſubſtance of the body is the ſoul.

All the parts are not formed together, but one after another in order; the firſt in being is that genital particle, by virtue of which (as from their original) all the reſt of the parts do ariſe.

De gen. an. l. i. c. 4.

The heart is firſt actually diſcerned, and that not only diſcoverable to ſenſe, but according to reaſon; after the heart, the interior parts are begotten before the exterior, and the ſuperior before the inferior.

Hiſt. an. vi. c. 3.

As to time, there begin to appear ſome indications of generation in hens, after three days (of incubation) and as many nights.

Hiſt. an. l. 6. c. 3.

On the fifth day, the body of the pullus is firſt diſcovered, the head is conſpicuous, and the eyes being large, continue ſo a long time.

But

But in the lower part of the body, there is no part at firſt extant correſpondent to the upper.

Harvey ſays, that you ſhall find nothing at all in a fertile egg, either added or altered, which is not in an addle one: from the male the plaſtical and generative faculty only proceeds, which renders the egg fertile, but doth conſtitute no part of it. Anatomical exercitations concerning the generation of animals.

Notwithſtanding the above declaration, he doth not aſſent to the opinion of Ariſtotle, namely, that the body proceeds from the female, and the ſoul from the male, as may be ſeen in his book, page 160.

But concludes, that the male uſes neither counſel nor underſtanding in generation, nor do men generate by any part of their reaſonable ſoul; but by a faculty of their vegetative.

Speaking of the appearances of the egg during the courſe of incubation, he ſays, that at the ſecond day, when the egg hath grown warm four and twenty hours under the hen, as the cavity which is in the obtuſe angle is much amplified, and fallen lower; ſo alſo doth the interior conſtitution of the egg vary and change. For the yolk, which before ſtuck faſt in the centre of the white, ariſeth towards the blunt angle, and the middle part of it, where the ſpot is ingrafted, is elevated, and applies itſelf to that membrane which encompaſſes the cavity; ſo that now the yolk ſeemeth to be annexed to the cavity of the cicatrice. From page 82 to 95.

On the ſecond day of incubation, or firſt of inſpection, the foreſaid ſpot (or cicatricula) is dilated to the magnitude of a pea or lentil, and is divided into circles (as if they were drawn by a pair of compaſſes) which have a very ſmall white point for their center.

When two days are now paſſed (we uſe the author's own words) the foreſaid circles of the cicatricula are more ample and conſpicuous, being the breadth of the ring finger, and ſometimes of the middle, wherein the whole macula or ſpot is divided into two and ſometimes into three regions.

If you obſerve on the fourth day, ſays he, you will meet with a great metamorphoſis and wonderful change, which are more evident for almoſt every hour all that day long; about which time it beginneth to ſtep from the life of a plant to that of an animal. For now the limbus or hem of the colliquamentum beginneth to bluſh and purple, being encompaſſed with a ſlender bloody line, and in the center almoſt of it, there leapeth a capering bloody point, which is yet ſo exceeding ſmall that in its diaſtole or dilatation it flaſheth only like the moſt obſcure and almoſt indiſcernible ſpark of fire; and preſently, upon its ſyſtole or contraction, it is too ſubtile for the eye, and quite diſappeareth. So ſlender are the firſt rudiments of life in creatures, which the plaſtical faculty ſets on foot by ſo undiſcoverable beginnings. If you are deſirous to make this diſcovery, towards the end of the third day you may, if you be extremely intent, by the aſſiſtance of a clear and great light, or by the ſun beams, or a perſpective, make a ſhift to diſcern it. For elſe this purple ſtreak is ſo exceeding nice and fine, and the motion of the punctum ſaliens is ſo imperceptible, that you will only loſe your labour. But, at the beginning of the fourth day it is evident; and at the end thereof, moſt notoriouſly viſible, that the punctum ſaliens hath now animal motion (ſaith Ariſtotle) in the candid liquour (which I call colliquamentum) and from that (point) two hollow threads like veins full of blood, are carried crooked to the purple line, and the coat encompaſſing the colliquamentum.

This diſquiſition (continues he) is of great moment, namely, whether there be blood before pulſation? and, whether the punctus ariſe from the veins, or the veins from the punctus?

As far as I have been able to obſerve, the blood ſeems to be before the pulſe; and my reaſon for believing it is this; one Wedneſday in the evening, I put three eggs under a hen, and upon the Saturday following, a little before the ſame time, I found theſe eggs cold, as being forſaken by the hen; however, opening one of them, I found the

the rudiments of a chicken, namely, the purple and bloody line in the circle; but in the center, inſtead of the punctum ſaliens, I found the punctum album, which is bloodleſs. By which I perceived the hen had not long deſerted her charge; whereupon, ſeizing her by force, I penned her up all night, having firſt layed the two former remaining eggs, with others that were not there before, into the neſt.

Now for the ſucceſs; the next morning betimes, my two eggs were well recovered, and I found in the center, the punctum micans, which was much leſs than the punctum album; out of which (namely, the punctum album) a ſpark or lightning darting, as it were, from a cloud, appeared in the diaſtole only. So that, to my apprehenſion, the punctum rubrum did leap out of the punctum album, at leaſt that punctum is generated in the punctum album. Nay, I have many times obſerved, the punctum ſaliens when (as quite expired) it lay deprived of all motion; it both acquired freſh motion and pulſation by a new heat and cheriſhing. Therefore, in order of generation, I conceive that the punctum and blood do firſt exiſt, but the pulſation arriveth not till afterward.

About the end of the fourth day and beginning of the fifth, being now elonged, it ſeemeth to be changed into a ſmall thin bladder, containing blood in it; which it ejects at every contraction, and recals again at every diaſtole.

I am confirmed, by many proofs and experiments, that not only motion is now the companion of the punctum ſaliens, but alſo ſenſe itſelf. For I have often ſeen, and ſo have many more who have been preſent, this punctum, upon contraction by a needle, probe, or the finger itſelf, nay, upon the admiſſion of a more ſearching heat, or cold, or any other thing that could moleſt and diſorder, declare many ſymptoms of its reſentment; for it would fly into many permutations of pulſe, beating much ſtronger and nimbler than before: ſo

that,

that, no queſtion, this punctum doth (as an animal) live, move and perceive.

On the fifth day, the body, at firſt, is ſcarcely diſcernible, was it not for the eyes and head, ſo that downwards it is not to be diſtinguiſhed by any members at all; whether wings, feet, breaſt-bone, rump, or any viſcus; nor, indeed, is it graced with any ſhape of a body: but as far as I could diſcover, it is only a little ſubſtance next adjacent to the ſmall vein, like the carina or keel of an imaginable ſmall ſhip wound up together, and like a maggot or worm without any platform of ribs, legs or wings; to which is faſtened a little round body, which is the rudiment of the head; which is more diſcernible than it, and divided into three bubbles (on which ſide ſoever you make your inſpection) but it is, indeed, divided into four; whereof two are longeſt and blackiſh, being the rudiments of the eyes; the third, of the brain; and the fourth, of the cerebellum or after brain.

On the ſixth day, the coats of the eyes are diſtinct, and the legs and wings begin to bud forth. The parenchyma of the heart now groweth to the veſicula pulſans; and a little after, the rudiments of the liver and lungs are diſcovered, and alſo the bill. About this time, all the viſcera and the guts may be ſeen: the heart expoſes itſelf firſt to ſight, and the lungs before the liver or the brain. But before all, the eyes are viſible, becauſe of their bigneſs and blackneſs of colour.

The viſcera and guts being now erected, and the fœtus being furniſhed with motion too; yet the fore-part of the body is ſtill wide open, being deprived of the thorax and abdomen; and the heart itſelf, the liver and the guts hanging out.

From the ſeventh to the fourteenth day, all parts are enlarged (as hath been ſaid) and more viſible. The heart, and all the other entrails, are now concealed in the ſeveral venters or bellies of the chicken; and thoſe that before were expoſed and naked, cannot now

be

be ſeen, but by opening the breaſt and lower belly. And by the twenty-firſt day, the pullus is perfect.

Malpighius ſupplies us alſo with an accurate deſcription of this affair, illuſtrated with curious cuts; from which, for the ſake of brevity, I ſhall only ſelect fig. 4. plate I. fig. 18. plate II. fig. 22. plate III. and figures 31. and 32. plate IV. together with a few of his obſervations which ſeem moſt uſeful on the preſent ſubject; and likewiſe ſhew that this great man diſcovered the rudimental parts of the pullus much earlier than the celebrated Harvey did: as for inſtance, in a fruitful egg, not ſat upon, he obſerved the upper part of the carina of the chick. In an egg, after the month of July, that had been ſat upon by an Indian hen ſix hours, above three-fourths of the carina were viſible. Appen. de ovo incubato. Page 2.

After twelve hours incubation, the cicatricula increaſed to the ſize A; in the center of which, the colliquamentum B, was obſerved with the carina, which delineated by white zones, marked out a little round head; and beyond the middle, firſt exhibited the orbicular veſicles of the vertebræ C, ſtanding out here and there: yet this ſtructure was moſt frequently covered by the little bag D; this was ſucceeded by a white circle like E, which, on the outſide, was encompaſſed by a copious rivulet of the colliquamentum F; next to this was extended the umbilical area G, which was waſhed by a broad rivulet H. To theſe were ſometimes added more ſmall circles I, carried round in the ſame manner. Plate IV. fig. 1.

After thirty hours, the circles of the cicatricula were obſerved to be multiplied, looſened and broken. The umbilical area A, was covered with ſmall varicous veſſels B, which were encompaſſed with elated ſolid portions of a paliſh ſubſtance: the colour of the veſſels was firſt yelky, and afterwards ruſty. In the ſame area the veſicle C was contained. The young, living in the colliquamentum, obtained ſuch a configuration. In the head, where there were obſerved dou- Fig. 2.

ble

ble appendices, the eyes D appeared; united zones from various elevated areas, encompaſſed five veſicles of the brain E, and the ſpinal marrow F, drawn out from thence. In the extremity of the angle, the dilated area G afforded a place for the laxated marrow, and the little bags of the vertebræ ſtood out.

Now the heart H was certainly diſcovered; and I have at preſent by me, ſays he, dried cicatriculas in glaſſes, in which it ſtands out manifeſt. As yet I could not determine, by repeated obſervations, and the help of my ſenſes, which was prior, the heart or the blood.

But this is certain, that before incubation I obſerved the ſtamina of the carina; afterwards, during incubation, there manifeſtly appeared the vertebræ, the rudiments of the brain and ſpinal marrow, with the wings and a fleſhy ſubſtance, with the heart, veſſels, and contained blood: but rivulets appearing in the umbilical area, it is probable that the heart hung to the carina long before the thirtieth hour. I diſcovered the ſtructure of the heart. Some conſiderable time intervenes before the ichor paſſes through the heart and veſſels; being firſt of a yellow colour, then browniſh, and laſtly reddening with blood; from whence I form this conjecture, which I hinted before, that the juice or fluid, veſſels and heart, very poſſibly pre-exiſt, and are ſenſibly manifeſted, as we obſerve the eggs of trees.

After forty hours, the little ſhoots of veins, being more viſible in
Fig. 3. the cicatricula, were drawn from the outward fringe A, into the heart of the productions B, from which the umbilical veſſels, forming the angle C, drew out the reticular branches, not as yet diſtinguiſhed into larger ſtocks.

The carina ſwam in the colliquamentum, and about it the ſmall bag D; at a little diſtance, the future amnion emerged, and the remaining larger part E was the chorion; in ſuch a manner was the carina of the chick.

In

In the head the uſual veſſels of the brain ſwelled; the firſt of which, repreſenting glaſs, ſeemed to ſwim in the reſt: the uſual zone, being made narrower, encompaſſed the brain and ſpinal marrow. Here and there the eyes F were placed. The heart G beat turgid, in that way and order as we have and ſhall more fully deſcribe.

After three days, the cicatricula varied a little from the horizontal ſituation, and its natural ſize did not exceed A. The young lay in Fig. 4. its cavity, ſo that the tract of the ſpine B appeared drawn from the cerebellum C; the vertebræ D, with the zones E, ſtanding here and there. The creſted veſicle of the brain F ſwam before the reſt of the humour, tranſparent and turgid; and the reſt G were manifeſt. The circles of the eyes as yet were open; the wings I were extended; the Fig. 5. rudiments of the legs K and the rump appeared. The heart was more increaſed, from whence the blood received from the auricle L, was drove from the vein M, through the duct N, into the right ventricle of the heart, and from thence through O into the left P; then into the arteries Q, and from thence into the trunk R.

After the fourth day, the eyes appeared with a blackiſh circle, and the humours contained in them. The heart alſo ſtood forth from the gaping breaſt.

After the fifth day his account agrees nearly with that of Harvey's; for after the ſixth day the beak appeared, the brain was incloſed by the ſkull; the feathers broke forth after the twelfth; the cavities of the trunk were cloſed after the fourteenth; and by the twentieth the formation was uſually perfected.

There are more authors who have wrote on this ſubject, but as the above two have explained it ſo fully, and their teſtimonies are of great weight, we ſhall proceed next to ſome obſervations on the formation of viviperous animals, which have been made by the very eminent

De mulierum organis, page 396 ad 407. Regn. de Graaf. This writer having inſpected rabbets at half an hour after coition, at ſix hours; at one, two, three, four, ſix, and even at the ſeventh day after coition; during which time, he careſully viewed the ova before they left the ovaria; while they ſojourned in the tubæ fallopianæ; when they arrived in the uterus (which happened in ſome at the third day) obſerves, that their contents, all this time, appeared to be only a limpid fluid. At the eighth day, it appears, by his ſixth figure, plate xvi. that a ſmall white cloud was ſeen in the center of the fluid contents of the ovum. On the ninth, this lit-

Plate IV. Fig. 6. tle cloud A manifeſtly appeared in the center of the fluid. In ano-

Fig. 7. ther, on the tenth day, he ſaw in the center of the fluid the rude mucilaginous lineaments of an embryo B, which reſembled a ſmall worm; and at this time he alſo diſcovered the placenta.

Fig. 8. On the twelfth day, he obſerved the head and members; and in the region of the breaſt, two bloody points. The outſide of the embryo appeared white, but the mucilaginous ſubſtance that roſe in the abdomen, from this time, tended to redneſs.

In the fourteenth day, the configuration was ſo far advanced as to appear as follows: the head was pellucid, the eyes were prominent, the mouth gaped, and the ears were diſtinguiſhed; the carina was ſtretched out in length, the trunk began to form, and to its tender ſides there run ſanguineous veſſels, which dividing into branches, extended to the back and limbs.

In the region of the breaſt, the puncta ſanguinea, being larger, now ſhewed themſelves to be the firſt rudiments of the ventricles of the heart; and towards the ſides of them there appeared white points in place of the lungs, which probably were the firſt rudiments of thoſe organs.

In the open abdomen, there firſt appeared the liver, changing a little red, and then ſome white corpuſcles, to which, in likeneſs of contorted threads, a mucilaginous matter was connected, and the firſt

rudiments

rudiments of the ſtomach and inteſtines. By the twenty-ninth day the formation was compleated, and the fœtus ready for the birth.

§. V. Having now given the obſervations of others, as propoſed, I ſhall next offer a few hiſtories which I wrote from ſome ova feminina, as they occurred to me in practice; ſome of which are repreſented by figures, as follows:

A woman who had an ill habit of body, but had been regular as to the catamenia for ſeveral months, excepting at the laſt period, when they were rather leſs in quantity than uſual, was ſeized, a little before the next expected period, with a hæmorrhagia ab utero; and in a few days miſcarried. History I.

The ſubſtance expelled was as follows:

It was about the bigneſs of a hen's egg; and weighed two ounces and a half Troy; it was covered with lamellæ of congealed blood, which, by compreſſure of the uterus, were become firm; and they were of a white colour. Theſe lamellæ being taken away, and a longitudinal inciſion made into its ſubſtance about three-quarters of an inch deep, it appeared only to be congealed blood, both in texture and colour; but the inciſion being continued farther, there appeared an oblong cavity near to the oppoſite ſide, which was encompaſſed by a fine blue membrane: near one half of this cavity was occupied by an ovum, the membranes of which were pretty ſtrong, of a blue colour, and the outer one adhered firmly to the inner ſurface of the cavity.

There was a ſmall quantity of fluid in that part of the cavity which was not filled by the ovum; and in the ovum itſelf there was a ſmall quantity of limpid fluid, and an oval body about the ſize of a canary ſeed. At a ſmall diſtance from this little round body, there aroſe, from the inner ſurface of this inner ovum, a funis umbilicalis, at the end of which there appeared ſome rudiments of a fœtus.

The covering of this inner ovum, when put into water, appeared to conſiſt of two diſtinct membranes.

History II. A ſlender and ſickly woman had the catamenia copiouſly at the uſual periods, but they diſappeared on the ſeventeenth of June, 1759; in the middle of September following, after a ſudden ſurpriſe, a flooding enſued, and in three days an ovum was expelled, which weighed ℥ iſs. ʒ iſs. and appeared as follows:

The placenta was at the ſmalleſt end, and covered about one-fifth part of the chorion; the reſt of the chorion was covered with a ſmooth membranous ſubſtance; and immediately under that, there was a layer of congealed lymph. The chorion and amnion being divided by a longitudinal inciſion, and the liquor amnii diſcharged, an embryo about the ſize of a large barley corn appeared, lying in that part of the cavity which was oppoſite to the placenta, and attached to the inner ſurface of the ovum by a funis of about three-fourths of an inch in length. The head was wanting, which, as I imagine, had happened by the motion in carrying it three miles.

The back part of the trunk was covered with the integuments, which appeared very white and ſmooth; the legs and arms had begun to ſhoot out from the trunk, and appeared like little round prominences; but the fingers and toes were not to beſeen by the help of the beſt glaſſes, with which I was aſſiſted by my learned friend, Dr. Demainbray, who viewed it alſo with the greateſt attention; and the anterior ſide of the trunk was not yet cloſed. In the ſuperior and left ſide of the cavity of the trunk, there was a little ſmooth curved body, which appeared very like the rudiments of the heart; but from one end of it there ran a veſſel directly to the funis umbilicalis, for which I cannot as yet account: a little to the right, and rather behind this little body, there appeared the rudiments of the liver, from which a veſſel alſo paſſed to the funis. The place of the lungs was partly occupied by a white fibrous ſubſtance, which probably had been defaced by the carriage;

# Plate V.

Fig. 1.

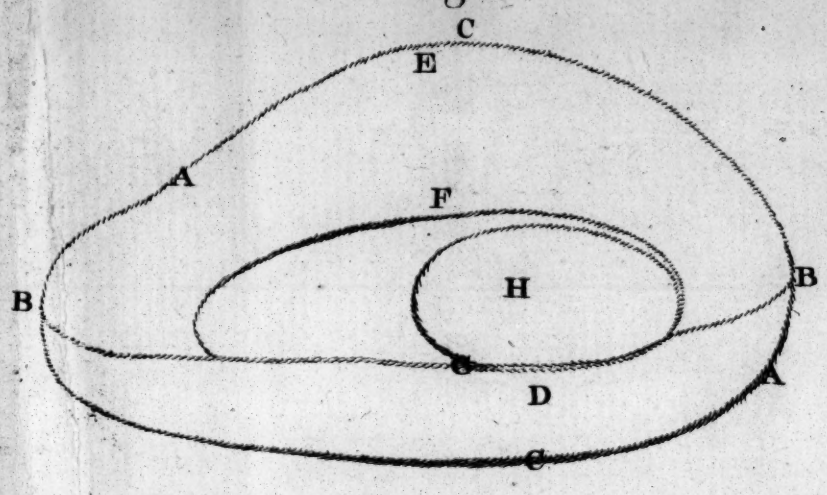


Fig. 2.

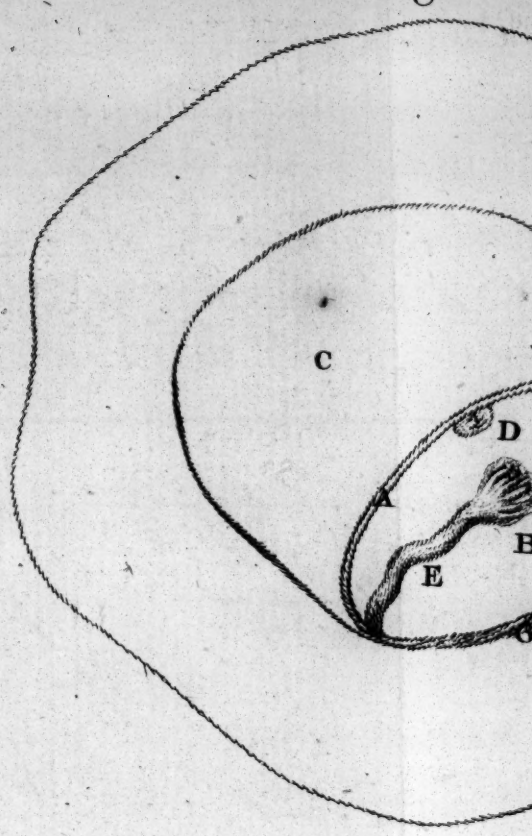


Fig. 9.

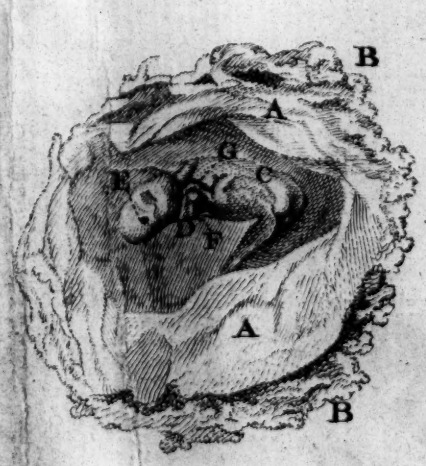


Fig. 10.

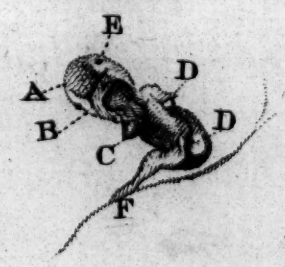


Fig. 12.

Fig. 11.

g. 2.

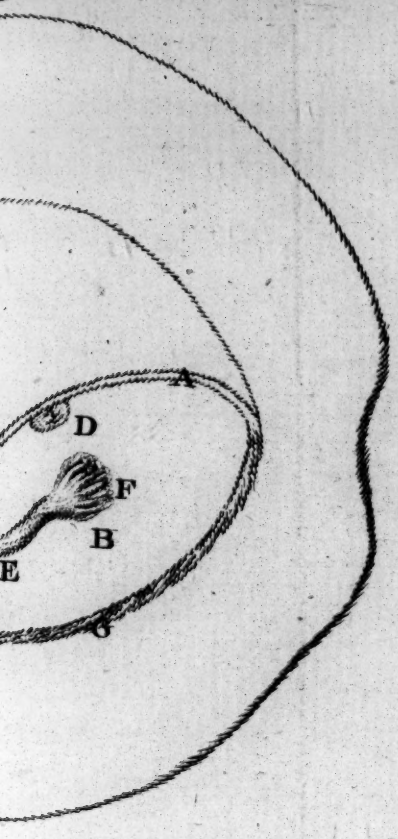


Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

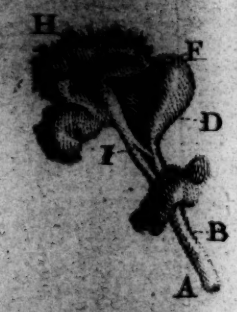


Fig. 13.

Fig. 15.

Fig. 14.

carriage: immediately below the heart and liver, the inteſtines, &c. appeared in a triangular bundle, but not as yet ſo perfect as to be diſtinguiſhed from each other. The funis was very large in proportion to the embryo, eſpecially towards the placenta; but towards the embryo, the umbilical veſſels were uncovered.

I remember well to have ſeen an embryo about the age of this; the trunk of whoſe body was entirely open before; although the external parts were ſo well formed, that by the naked eye I could eaſily ſee the eyes, noſe, mouth, and four limbs.

History III. Mrs. Cummins, in Brentford, being ſeized with a hœmorrhage from the uterus, on the twelfth of December 1759, ſent for me on the fourteenth, and informed me that ſhe had had the misfortune to miſcarry often about the ſecond or third month of pregnancy; that ſince the preceding Auguſt, the catamenia had returned every three weeks very copiouſly, excepting the laſt time: and that two days before, being the time when ſhe expected them to return again, ſhe was then ſeized as before mentioned, attended with pains, which becoming ſtrong, ſeveral clots of coagulated blood were expelled, and not long afterwards ſucceeded by the diſmiſſion of an ovum which weighed two ounces and a half Troy.

Plate V. Fig. 1. The form and magnitude of this ovum correſponded with A; the length B was three inches, and the breadth C two inches. Excepting the flat ſide D, it was covered with congealed blood, the texture of which was become fibrous, and of a whitiſh colour on the outſide. This bloody lamella being removed, it ſeemed then to be all covered (except the ſmalleſt end) with a ſmoothiſh membrane: but having made an inciſion longitudinally into its ſubſtance, from E to F, it proved to be only condenſed blood. From F to G there was an oblong cavity encompaſſed with a fine blue membrane, which contained a ſmall quantity of limpid fluid.

In

Fig. 2. In one end of this cavity there was an ovum H, formed by two pretty ſtrong membranes A; this figure repreſents the ovum when opened by the inciſion, and the two ſides ſpread out.

The interior ovum B, occupied near one-half of the cavity C. On the inſide at D, there appeared the little white body attached firmly to the membranes; and at the diſtance of an inch from it, there aroſe from the inner ſurface of the ovum a perfect funis umbilicalis E, which was about three-fourths of an inch in length, and terminated with whitiſh fimbriæ, or rather fibrous loops F.

I imagined theſe fimbriæ to be the originations of the embryo, becauſe the liquor amnii was very pellucid, and there was not the leaſt appearance of any part of the fœtus to be ſeen in it: nor had there been any motion uſed (as far as I know) which could ſeparate the parts of the fœtus, and blend them ſo minutely with the fluid as not to be ſeen.

The chorion of this ovum, ſeemed to adhere firmly to (or to be blended with) that membrane which ſurrounded the cavity C, that is, on the ſide G to which it lay contiguous.

This membrane, which ſurrounded the cavity C, was probably the membrana caduca Hunterana, although I did not underſtand it; but imagined it to be ſome misformation occaſioned by the layers of blood.

Hiſtory IV. A patient of a healthy habit of body, having the catamenia during the ſecond week of January 1763, they then ceaſed; and in fourteen days afterwards, ſhe had ſickneſs at her ſtomach, eſpecially in the morning and evening, which continued till the middle of March.

In the firſt week of April, having puſhed a drawer with a good deal of force, ſhe ſoon afterwards felt a pain in the left ſide of the hypogaſtrick region: in three days a flooding came on, which continued in a larger quantity than the menſes, for three days; at the

end

end of which, an ovum was expelled, which being examined, proved as follows:

The ſecundines weighed five drachms; liquor amnii one ounce; and the embryo three grains, Troy weight.

All the outer ſurface of the chorion, except the ſmalleſt end, and a little ſpace near it, on the oppoſite ſide to the origin of the funis, was covered with a fleſhy ſubſtance; which, at the root of the funis, was two-eights of an inch thick; and from thence it became gradually thinner to that part where the membranes were bare. This fleſhy ſubſtance or firſt rudiments of the placenta, was, near to the root of the funis, of a reddiſh colour; and from thence to the edges it became whitiſh, reſembling fat; its texture alſo greatly reſembled that of fat.

The ovum being turned inſide out, the funis appeared to have originated in one ſide of the largeſt end, and to have run about half an inch between the amnion and chorion, towards the ſmall end; before it left the inner ſurface of the amnion to become looſe in the cavity of the ovum. That part of it which was looſe, meaſured full half an inch in length, and terminated in fibres, amongſt which there appeared four larger than the reſt; which, as I apprehended, were part of the umbilical veſſels that had been torn from the embryo, but I could not obſerve any thing like the rudiments of the bladder adhering to them.

From the funis, as it left the inner ſurface of the amnion, there paſſed along between the chorion and amnion, for about three-fourths of an inch, a very ſmall white veſſel, which entered into one end of the little white body, ſuch as I have deſcribed before. This little body was ſituated between the membranes, had a coat proper to itſelf, formed by a ſtrong white membrane; and its inner ſubſtance was white, and greatly reſembled the medullary ſubſtance of the brain.

The

The liquor amnii was limpid; and would not coagulate by heat.

The formation of the embryo was not compleated, and without help of glaſſes appeared thus: the head was larger than all the reſt; the face was not formed, there being in its place a fibrous ſhag; but at its upper part, the rudiments of the eyes appeared: the ſuperior, poſterior, and lateral ſides of the head were covered with the integuments, which appeared like a white and very ſmooth membrane, whoſe edges terminated looſe and fibrous all around the margin of the face: the vertex was conical; the occiput was very large in proportion to the reſt of the head; the neck was ſhort, a little ſulcus on its anterior ſide diſtinguiſhed it from the head; and its vertebræ appeared larger than any of the ſpine.

The vertebræ of the ſpine were ſo manifeſt, that I eaſily told twenty eight, and ſometimes thirty of the thirty-two; but as theſe of the coccyx were extremely ſmall, I could not diſtinguiſh the articulations of the two laſt: thoſe of the os ſacrum were as regular and diſtinct as any other of the ſpine.

Hence, reckoning ſeven for the neck, twelve for the back, five for the loins, five for the ſacrum, and three for the coccyx, although I could not diſtinguiſh the latter from one another, yet it is highly probable they were formed. The whole length of the carina, namely, from the vertex of the head to the apex of the coccyx, was an inch.

The coſtæ were manifeſt, but were not as yet joined before by a ſternum; therefore, hanging looſe from each ſide of the ſpine like ſmall threads, neither of the cavities of the trunk were formed. There was not the leaſt appearance of limbs; there was a dark ſpeck on each ſide of the ſpine, at the articulation of the inferior vertebra of the neck, and firſt of the back, from whence it is probable the arms were to ſhoot; and to each ſide of the ſuperior vertebra of the ſacrum,

a flattiſh body with obtuſe angles was attached by a fine membranous ſubſtance. Theſe flat angular bodies were manifeſtly the oſſa innominata; but were not, as yet, joined by a ſymphyſes at the pubes, to form the pelvis.

The whole anterior ſurface of the carina was covered with a fine fibrous ſhag, ſuch as covered the ſpace of the face; and its poſterior ſide was covered with the ſame ſmooth membrane which covered the poſterior ſide of the head; and its edges projected looſely from the ſides of the ſpine, in the ſame manner as it did from the margin of the face. This membrane was manifeſtly the rudiments of the integuments, and very probably the originating muſcular parts of the trunk alſo.

This embryo had happened to be ſeparated from the funis while it was in the ovum: for having perforated the membranes with the points of ſciſſars, to diſcharge the amnion liquor, the embryo came with it; and although I took it out of the liquor, with all the care I could, and put it immediately into water, yet, by removing it, the cavities of the trunk not being cloſed, the viſcera proved to be ſo ſlenderly attached to the ſpine, that they ſeparated from it.

Although the viſcera did not ſeem to be ſo perfectly formed as the carina; yet, the heart and its auricles were very manifeſt: but I could not diſcover any lineaments of the pericardium. There was a membranous ſubſtance which ran acroſs juſt above the liver and ſpleen, and below the heart, which I took to be the diaphragm; and below it there appeared ſeveral white fibres or veſſels, the extremities of which, ſeemed to have joined to the extremities of the funis.

The liver and ſpleen were very manifeſt; the liver was the largeſt viſcus, the ſpleen next, and the heart next to that. The rudiments of the meſocolon and meſentery, were eaſily diſtinguiſhed; that part of the meſocolon which invelopes the ſmall inteſtines, appeared very tranſparent, yet none of the inteſtines could be diſtinguiſhed, except

the rectum, which hanging down, protruded behind the meſocolon, and was very evident. I could not diſtinguiſh the pancreas, bladder, or any other part of the viſcera; there was, indeed, a fibrous ſubſtance which roſe from the ſuperior and poſterior parts of the diaphragm and heart, which I took to be the rudiments of the lungs.

The whole embryo was of a gelatinous conſiſtence and white colour, without the leaſt appearance of any red globules of blood. The head and ſpine reſembled the medular ſubſtance of the brain of an adult, both in colour and conſiſtence: but the viſcera appeared more vaſcular.

History V. A patient, who had enjoyed a regular ſtate of health for ſeveral months; the firſt week of Auguſt 1763, being her expected period, ſhe was then as uſual. The firſt week of September, being her next period, the flux did not return, upon which ſhe then had ſickneſs at ſtomach, attended with other ſymptoms of conception.

On the thirtieth of October, being greatly afflicted and ſurprized by the ſudden death of an only ſon, ſhe was ſeized with a ſlight flooding, attended with ſome pain; which continued to the third of November, (N. B. This makes about ten weeks from the time in which ſhe may be ſuppoſed to have conceived) at which time an ovum was expelled, whoſe form and appearance were as follows:

The length was three inches and a half; the breadth, at the largeſt end, two inches; and at the ſmalleſt end, one inch.

On the largeſt part, for two inches in length, the chorion had no ſhagg, or fibrous covering; but on the ſmalleſt end, it was covered an inch and a half in length by the placenta, which in its ſubſtance was near two-eighths of an inch thick.

Preſently after the expulſion of this ovum, ſhe expelled another ſubſtance, the outer part of which was fibrous and fleſhy; and the inner part made up of black congealed blood.

The ovum contained an ounce of liquor amnii; which, although limpid, was tinged a little to a red or bloody colour.

This fluid would not coagulate by heat.

The ſecundines weighed, of Troy, three drachms and one ſcruple; and the embryo three grains.

The little white body, as obſerved before, appeared here between the membranes, at about an inch diſtance from the root of the funis.

The formation of the fœtus was not compleated; the colour was white or pellucid, without any appearance of red globules of blood; and its conſiſtence was gelatinous, and even ſo looſe in its texture, that by the motion of the chariot on a ſmooth road, in two miles carriage, the ſpine was divided at the laſt vertebra of the neck; and the viſcera alſo being ſeparated from the carina or ſpine, hung at the extremity of the funis umbilicalis.

The carina being replaced, appeared as here repreſented by the moſt ingenious Mr. Kirby. The anterior ſide of the head A was flat, and covered with a pellucid fibrous ſhag, without having any of the lineaments of the face, as they are when formed. Fig. 3.

The cavities of the thorax and abdomen were not formed.

At that part B, where the ſpine had been divided by the carriage, there aroſe a production C from each ſide, which ſeemed to be the firſt rudiments of the arms. And at this place, where the ſpine had been divided, the viſcera, as I apprehend, had alſo been ſeparated from the carina. Fig. 4.

The ſeven vertebræ of the neck D *, twelve of the back E, five of the loins F, and five of the ſacrum G were manifeſt: but the three of the coccyx H, were either ſo cloſe together, or ſo much obliterated by moving, that we were not able to diſtinguiſh them. Eleven ribs Fig. 5.

* Fig. 5. is the ſame embryo magnified by a glaſs.

I, on each ſide, were manifeſt; and ſpread out from the ſides of the ſpine like the ribs of a flat fiſh. The oſſa innominata were not to be ſeen adhering to the ſpine; there were, indeed, two ſmall and flattened bodies, which were ſeparated from the carina; but whether they were thoſe, or ſome of the viſcera, I could not be certain; nevertheleſs, I am inclined to believe, they were the rudiments of the oſſa innominata.

Fig. 6. The poſterior ſide K was covered with the integuments, which at the margin of the face and extremities of the ribs, terminated in a fringe of very ſmall fibres. The occiput L appeared prominent and very manifeſt; and on each ſide of the head there was a black ſpeck or point M, which ſeemed to be the lineaments of the eyes; and at the upper part of all, in the center, there were two dark ſpecks cloſe together; but whether theſe were the firſt lineaments of the noſtrils, or not, I ſhall not venture to determine.

Under the rudiments of the os frontis, there appeared a cavity or hollowneſs, but all the reſt of the head was full of the medullary ſubſtance, and was very firm in its texture.

Fig. 7. From the extremity of the funis umbilicalis A proceeded a veſſel B, which at a little more than the eighth part of an inch, terminated in a little ſmooth curved body C, which appeared to be the firſt rudiments of the heart. The convex ſide D, of this little body, pointed to the left ſide; and below its middle there was an apex or prominent part, which pointed obliquely downwards to the left ſide.

Fig. 8. The upper end F *, contracted into a veſſel, which was ſoon hid by a group of white fibres, to the right ſide of which, adhered an irregular body G, conſiderably larger than the heart; which, by a fiſſure near to the middle, being divided into two lobs, appeared to be

* This is the ſame portion of the viſcera magnified by a glaſs, and a little altered in its poſition.

the

the liver: and from the upper ſide of all theſe, there proceeded many fibrous ſhoots H, which ſeemed to be the firſt rudiments of the lungs.

From the concave ſide of the heart, near the lower end, obliquely backwards, there aroſe a ſmall veſſel I, which paſſing obliquely backwards, and to the right ſide quickly joined, or terminated in the ſide of another veſſel K, which ran from between the liver and upper end of the heart, to the extremity of the funis umbilicalis A. This laſt veſſel was inveloped in a membranous ſubſtance, and accompanied by many ſmall white fibres.

Whether this was the great aorta or not, I am not able as yet to ſay. However, that veſſel B, which ran (as already deſcribed) from the funis to the heart, appeared to me to be the umbilical vein.

This vein was much larger than the reſt, the neceſſity of which is very evident, ſeeing its office muſt be to convey nutrition to the embryo; and maintain the ſame till formation be nearly, if not entirely finiſhed; and thus for ſome time before that a circulation from the embryo to the placenta becomes neceſſary.

A middle aged woman, who had often miſcarried about the ſixth week after conception, expelled an ovum on the eighteenth of June 1765, whoſe appearances were as follows: History VI.

The membranes A were very tranſparent, and from the ſurface of the external one, there roſe a great many white fibres B. The membranes being opened and folded back, the embryo C appeared thus; it was of a white fleſh colour, gelatinous conſiſtence; and was covered with the cutis, which appeared thick and extremely ſmooth. Plate V. fig. 9.

The anterior part of the neck D ſeemed to be divided, or lacerated from the trunk; whether naturally ſo, or accidentally by compreſſure in time of the expulſion, I cannot ſay; but am inclined to think it happened by the latter. The eyes E appeared like ſmall black rings.

rings. The upper and hind part of the head was covered with the integuments: but the face was not yet formed.

The thorax F was open, and the heart G projected forwards with two protuberances at its basis, which seemed to be the auricles. There was no appearance of lungs. The limbs had begun to shoot; but were not so far advanced as to permit us to distinguish the cubits, legs, fingers or toes, even by the help of glasses. The funis I was very transparent, and very bulky in proportion to the size of the embryo. There was no appearance at all of any red globules of blood.

Fig. 10. Figure 10. represents the anterior side of the embryo, A the cerebrum at the upper part of the head; B the space for the face; C the heart; D the originations of the limbs; E the eyes, and F the funis.

The abdomen being opened by the point of a lancet, whilst the embryo swam in water, there appeared a large mass, or fibrous bundle A, on the right side of the cavity; directly under which, and a little towards the left side, there was a long curved body B, which seemed, at first view, to be the stomach and a part of the intestinal tube. Immediately behind B, there ran, contiguous to the spine, a large vessel from the umbilicus to the heart.

Fig. 11. Figure 12. delineates this vessel, and what I supposed was the stomach, magnified by glasses.

A the stomach, and B the vessel. But by a second examination, I am inclined to believe, that what I imagined was the stomach is the umbilical vein.

The texture of the heart and those vessels were very firm or compact; but that of the liver mouldered easily into roundish or glandular fragments.

A patient

A patient, about the age of forty, being much fatigued with company on the eighth of July 1764, was ſeized that evening with a fluxus ab utero, but in ſo moderate a degree, as to reſemble the menſtrua, which had not appeared for fifteen weeks before. History VII.

This flux continued ſometimes leſs than others, till the ſixteenth, and then an ovum was expelled, whoſe ſecundines weighed two ounces and two drachms, Troy; liquor amnii one ounce; and embryo four grains.

The greateſt part of the ovum was externally enveloped with a whitiſh ſpongey membrane, under which lay the placenta, conſiſting of a red and fleſhy ſubſtance, interwoven with many white fibres or veſſels, which connected it very firmly to the outſide of the chorion. The chorion was of a blue colour, thick and very firm in its texture. On the inner ſurface of the chorion lay the amnios, which appeared alſo of a blue colour, but thinner and more tranſparent than the chorion, and having been macerated three days in water, ſeparated from it, and appeared reflected or folded.

I ſearched carefully for the little white body which I had obſerved in others, but could not find it in this.

The funis umbilicalis began at the ſmall origin H, near the largeſt end of the ovum, from whence to the embryo I it became gradually larger; and in length was about three-fourths of an inch. The umbilical veſſels lay ſo contiguous to each other, as not to be diſtinguiſhed, but appeared like a white chord, without any red globules of blood. Plate V. fig. 13.

The embryo I was very ſmall, in conſideration of its age, and its formation did not appear to be entirely finiſhed. It lay curved, and as here repreſented by Mr. Kirby. The head A was very large in proportion to the reſt; the eyes B appeared like two little black ſpecks, with a whitiſh point in the middle of each: the ears did not appear, nor could we diſtinguiſh the noſe; but the fiſſure

C appeared

C appeared to be the mouth: the thorax and abdomen were entirely cloſed. The arms D, and lower limbs E, had begun to ſhoot; their extremities appeared flattened, and on the outſide of theſe flattened extremities there appeared the lineaments F of the fingers and toes, the former of which were much more manifeſt than the latter: at the lower and poſterior part of the trunk, there appeared a prominent point G, which ſeemed to be the apex of the coccyx; and in the lower anterior part between the limbs, there appeared another prominency with a ſulcus in its middle, which diſtinguiſhed the embryo to be a female. Theſe appearances were all manifeſt to the naked eye; and by the help of a microſcope, we could only further diſcover the lineaments of the thumbs; and on the ſuperior and poſterior parts of the head, an oval veſicle or part which appeared whiter than the reſt, the poſterior of theſe veſicles was much the largeſt. There was not the leaſt appearance of any red globules of blood in any part of the embryo.

History VIII. A ſlender and ſickly woman who had miſſed the catamenia twice, was ſeized with an hœmorrhagia ab utero; and in four days expelled an ovum, whoſe appearance proved as follows:

The weight, of Troy, was an ounce and three drachms; the length two inches; breadth, at the broadeſt end, one inch and a half; at the ſmalleſt end one inch, and the thickneſs one inch. The chorion was ruptured longitudinally; and, as I ſuppoſe, had ſlipped off to the extremity of the largeſt end, as the ovum paſſed through the os uteri: but when laid back upon the amnion, its fleſhy fibrous ſhagg which had lain next to the inner ſurface of the uterus, was very manifeſt. The inner ſurfaces of both chorion and amnios were very ſmooth; and being opened longitudinally, inſtead of liquor amnii and fœtus, I found a conical nucleus or ſubſtance, which filled up the whole cavity. This nucleus was covered with a ſmooth membrane, which ſeemed to be a reflection of the amnii from one ſide of the cavity, and

its

its ſubſtance was made up only of congealed blood, which by compreſſure of the uterus had acquired firmneſs. This was what is commonly called a falſe conception; but was really a falſe formation.

A young lady, who had miſcarried once before at the third month, having again miſſed the catamenia twice, was ſeized with a flooding on the third of December 1760, and in four days expelled an ovum, or rather a ſubſtance, the weight and appearance of which were as follows; History IX.

The weight one ounce, and ſix drachms and a half; and the form reſembled that of a pear. It was covered externally with a ſmooth membrane, under which there was a thick ſtratum of congealed blood; and being divided by a longitudinal inciſion, there appeared a cavity in its middle about an inch and a half long, and half an inch broad, ſurrounded with a fine blue membrane.

Towards the ſmalleſt end of the ſubſtance, in this cavity, there appeared a tranſparent membranous ovum about the ſize of a white currant, which adhered firmly to one ſide of the cavity. In this pellucid ovum, there appeared a little white pyriform body, about the bigneſs of a millet ſeed; but I could not diſcover any parts of an embryo, either by the naked eye or help of glaſſes.

The thickneſs of the ſubſtance, from the cavity to the external ſurface, eſpecially at the largeſt end, was full half an inch.

The external membrane or covering, appeared to be only the ſizy part of the blood condenſed firmly by the compreſſure of the uterus. The blue membrane which encompaſſed the cavity, ſeemed to be the chorion: the intermediate ſubſtance between this and the external covering at the ſmalleſt end, conſiſted of whitiſh fibres; but at the largeſt end, which had lain contiguous to the fundus uteri, it conſiſted only of congealed blood. The little pellucid membrane which formed the little ovum, ſeemed to be the amnion; and the ſmall white body in it, may reaſonably be allowed to be that white

body ſo often made mention of before, and which I have not only often diſcovered in the well-formed ovum, but frequently alſo in thoſe which I have called falſe formations.

The misformation of this fœtus might probably ariſe from the outer ſurface of the chorion's being covered with blood, immediately after its arrival in the cavity of the uterus; and this layer of blood attracting more, hence becoming thicker, the rudimenting parts of the embryo could neither have ſpace to form, nor a proper ſupply of nouriſhment to maintain their growth.

History X. In the year 1758, a young healthy woman, who had twice miſſed the menſes, was, in conſequence of a ſurprize, ſeized with ſome pains, attended with a copious hœmorrhagia ab utero; and in a few hours an ovum came away, whoſe appearances were as follows:

The entire ovum reſembled a hen's egg both in form and magnitude; and weighed an ounce Troy. The liquor amnii weighed three drachms and two ſcruples; the fœtus one ſcruple; and the ſecundines four drachms.

The fœtus was a male, and perfectly formed; the eyes, noſe, mouth, ears, upper and lower limbs, fingers and toes, and even the privities, were all extremely manifeſt. The head was nearly as big as all the reſt of the body; the cavities of the thorax and abdomen were entirely cloſed; and its whole ſubſtance appeared white and gelatinous.

The outer ſurface of the chorion was covered with a fleſhy fibrous ſubſtance, which appeared as if it had adhered to the inner ſurface of all the cavity of the uterus. This ſubſtance was full half an inch thick at the ſmalleſt end of the ovum; but at the origin of the funis umbilicalis, which was on one ſide, near to the largeſt end, it was only one-eighth part of an inch thick.

A woman

A woman of a thin and hectic habit of body, having miſſed the catamenia twice, was ſeized with flooding, and on the ſecond day miſcarried.

The ovum was about the ſize of a ſmall pullets egg; and on its outer ſurface there were very few fleſhy fibres to form the placenta, which probably was the cauſe of abortion. Having opened the membranes, and diſcharged the liquor amnii, I found that the fœtus was perfectly formed. It was of a white colour, and gelatinous conſiſtence; the bigneſs of a ſmall bee; the head nearly as large as all the reſt of the body; and the thorax and abdomen were entirely cloſed.

In the year 1758, a young and healthy lady, who had twice miſſed the catamenia, by over hurrying herſelf, was ſoon afterwards ſeized with a flooding; and in leſs than twelve hours miſcarried. History XI.

The ovum was larger than a hen's egg, and covered almoſt all over with a thick fleſhy ſubſtance, on the ſurface of which there was a rough fibrous ſhagg. It being opened, the fœtus appeared perfectly formed, and was of a white colour, gelatinous conſiſtence, and the bigneſs of a ſmall bee. The fleſhy ſubſtance or placenta, on the outſide of the chorion, was very thick oppoſite to the root of the funis; hence, without ſuch an accidental ſeparation from the uterus, it is highly probable that ſhe muſt have gone the full time.

In leſs than thirty days after this abortion, the ſame lady was taken again with a ſlight flooding, and expelled another ovum, whoſe form and magnitude were as follows: History XII.

The ovum was the bigneſs of a ſmall pullet's egg, but had very few fleſhy fibres on the outer ſurface of the chorion; hence, not the ſufficient ſubſtance to abſorb the due nouriſhment from the uterus.

Although the formation of the fœtus be uſually compleated about the eighth or tenth week, yet ſeveral caſes have occurred to me Obſervation.

wherein it was manifeſtly acccompliſhed ſooner; of which, for brevity's ſake, I ſhall only add the next following.

History XIII. A ſtrong healthy woman, who had the catamenia copiouſly every three weeks or month, during a conſiderable time after the birth of a child: after having them a whole week, according to theſe periods, they then diſappeared on the twenty-fifth day of February 1760, and ſhe ſaw no more of them till the ſeventh of April, when ſhe was ſeized with a pain in her back; in the evening with a flooding; and at four next morning an ovum was expelled, whoſe appearances were as follows:

Fig. 14. The fœtus A was a male perfectly formed, and remarkably large for the age; for it was two drachms and three grains Troy weight; the liquor amnii two ounces; and the ſecundines eleven drachms. The placenta was well formed; and the ſurface of the reſt of the chorion was not ſo much covered with a fleſhy ſubſtance as thoſe already deſcribed.

As the catamènia had been regular as to time and quantity, it is moſt reaſonable to ſuppoſe that this woman did not conceive till about a week, or at leaſt, a few days after they diſappeared: therefore, this fœtus could not be above forty days old. If I had not been very ſtrict in making enquiry into this affair, and ſeen the fœtus, I could not have believed that it could have arrived to ſuch bulk in ſo ſhort a time. But as for the poſſibility of its formation being compleated in ſuch a time, the preceding caſe teſtifies; for we cannot reaſonably ſuppoſe that the fœtus, in that caſe, was above twenty-three days old.

§. VI. The above hiſtories being all I have been able to collect hitherto concerning the order of formation, and the time of its completion; I ſhall beg to be indulged a little farther in adding a few, which

which give ſome hints in reſpect to the proportions which the placenta, fœtus and liquor amnii bear to one another at different times of pregnancy.

A ſmall ſized woman, who had enjoyed a good ſtate of health, having the catamenia in the latter week of December 1759 (regularly as to time and quantity) they then diſappeared. History XIV.

On the fourth day of the April following, ſhe was ſeized with the ſmall-pox; and on the fourteenth of the ſame month, being recovered from this diſeaſe, ſhe without any flooding miſcarried. The fœtus was a male, and weighed three ounces and a half of Troy weight; and the ſecundines three ounces and ſix drachms. It is very probable that the growth of this ovum was obſtructed during the time of the mother's diſeaſe; but it appears that the fœtus could not be more than three months and about a week old, as the mother cannot be ſuppoſed to have conceived before the beginning of January.

A woman, aged twenty-eight, being four months gone in pregnancy, miſcarried on the thirtieth of July 1760; in the firſt week of the following September, ſhe was troubled with ſickneſs at ſtomach, a diſlike to food, as was uſual to her when ſhe had conceived: on the eleventh of the following December, without any known cauſe, ſhe was ſeized with an immediate flux ab utero, which did not continue long; on the thirteenth it came on again, attended by forcing pains; and at two o'clock next morning, by the force of nature, the fœtus and ſecundines were expelled. History XV.

The fœtus was well formed, and weighed five ounces, and the ſecundines three ounces. At the root of the funis, the placenta was half an inch thick, from thence to the edges it became gradually thinner, and was very broad in proportion to the ſize of the ovum. Its ſubſtance was of a whitiſh colour and glandular texture, greatly reſembling fat. The chorion was very thick, and its outer ſurface covered with many fleſhy fibres. The amnion was very thin and

tranſparent,

tranſparent, and ſeparated very eaſily from the chorion, till it came to the funis.

As this woman had no ſymptoms of conception till the firſt week of September, ſhe cannot be ſuppoſed to have been entirely four months gone in pregnancy.

Hiſtory XVI. A woman of a ſlender habit of body, aged thirty-nine, being five months and a half advanced in pregnancy, without much flooding, miſcarried. The fœtus was a male, well-formed, and of a healthy aſpect. It weighed, of Troy, eleven ounces and ſix drachms; and the ſecundines ſix ounces and ſix drachms.

Hiſtory XVII. A healthy woman, aged about thirty-five, having miſſed the menſes ſeven times, was, by a ſudden ſurprize, ſeized with labour; and having deſired my aſſiſtance, I went to her directly, but before I could arrive, ſhe was delivered by the help of pains only. Having deſired to ſee the child, I found that it was dead, and ſtill remained in the membranes along with the liquor amnii.

The ovum, when laid upon a plane, meaſured ſeven inches and a half in length; and ſix in breadth. The placenta was ſituated near to one end, it was a little oval, being four inches and a half long and four broad.

At the root of the funis it was ſeven-eighths of an inch thick; and from thence became gradually thinner to the edges.

The chorion ſeparated eaſily from the amnios, and the amnios eaſily from the ſide of the placenta, until it came to the root of the funis, where it firmly adhered.

The chorion was very tender; but the amnios was ſo ſtrong, that, at three days after birth, it permitted me to turn it over ſeveral times without burſting.

The membranes being opened, the head of the fœtus lay in that end next to the placenta, with the face towards it; the chin lay upon the breaſt; the hands towards the groins; the knees towards the abdomen; and the feet towards the nates.

The

The liquor amnii meaſured only half a pint, was very turbid, and of a brown colour.

The funis was twenty inches in length, and twiſted from left to right above twenty times round; and at the navel, by theſe twiſts, it was ſo very ſmall, that it was impoſſible for the circulation to be maintained between fœtus and mother; hence abortion muſt enſue.

This woman had been much employed in ſcouring and cleaning of rooms upon her knees; which, by the prone poſition of body, might probably have occaſioned thoſe twiſtings in the funis.

Hiſt. XVIII. A ſmall ſized woman, who was rather unhealthy, having the catamenia copiouſly during the firſt week of November, they then left her; and on the fifteenth of the following Auguſt, which made nine ſolar months and ſeven days, ſhe was taken with labour, and ſoon delivered of two children, whoſe weights, together with thoſe of the ſecundines, were as follows:

The firſt was a boy, and weighed, of Troy, ſeven pounds three ounces; the ſecond was a girl, and weighed five pounds nine ounces; each had a diſtinct placenta and ſet of membranes; and although that part of the chorion which lay contiguouſly adhered firmly; yet, by a little care, they ſeparated perfectly from each other. The boy's ſecundines weighed one pound ſix ounces; and the girl's only one pound. The placentæ were both of an oblong figure; the boy's was twelve inches long and eight broad; and, at the root of the funis, one inch and a quarter thick: the girl's eight inches and a half long, and ſeven broad; and, at the root of the funis, one thick: from thence it appears, that a very large part of the inner ſurface of the uterus had been covered with the placenta of thoſe children.

§. VII. Now let us review the weights of ſome of the preceding fœtuſes, and we ſhall ſee that their proportions to thoſe of their ſecundines and liquor amnii, were nearly as follows:

History IV. At about the tenth week of formation, not being yet finiſhed, the weight of the embryo was, to that of the liquor amnii, as one to 168; and to that of the ſecundines, as one to 100.

V. Another of the ſame age, was to that of the liquor amnii, as one to 168; and to that of the ſecundines, as one to 106.

X. About the eleventh week, the fœtus now being formed, was to that of the liquor amnii, as one to eleven; and to the ſecundines, as one to twelve.

XIII. About the fortieth day, this fœtus being ſo early formed, was to that of the liquor amnii, as one to eight; and to the ſecundines, as one to five and a half.

XIV. About three months and one week, the proportions were ſo nearly equal, that the fœtus, to that of the ſecundines, was as twenty-eight to thirty.

XV. About the fourth month, the child, to the ſecundines, was as five to three.

XVI. At five months and a half, the child was, to the ſecundines, as nearly eleven to ſeven.

XVII. Although I neglected to take the weight of this child and ſecundines, yet, as it was between the ſeventh and eighth month, we may reaſonably conclude that the child weighed fully five pounds, and the ſecundines one; therefore, it muſt be to that of the ſecundines as five to one; and to that of the liquor amnii as ten to three.

At time of maturity, the child is uſually, to the quantity of the liquor amnii, as ten to one; and to that of the ſecundines, as ten to two.

XVIII. The twins, were to thoſe of the ſecundines, as ſix to one.

Thus it appears how greatly the proportions of the liquor amnii and ſecundines exceed that of the embryo before the time of its formation; when formed, how much the liquor amnii is diminiſhed; how their proportions become nearly equal towards the fourth month;

and

and how, after this time, thoſe of the child exceed them greatly; the liquor amnii, which at firſt being by far the greateſt, now becoming the leaſt, ſo as by the time of maturity, ſcarcely to exceed the tenth part of that of the child, and third of that of the ſecundines.

§. VII. From what has been ſaid in this, and the preceding chapter, we may reaſonably deduce the following concluſions, namely: Inference.

Firſt, That the fœtus does not exiſt all at once, but ſome of its parts exiſting ſooner, and ſome later, in a gradual progreſs, are formed by an accretion of their reſpective conſtituent particles.

Secondly, That the parts which firſt appear are manifeſtly the funis, carina, heart, veſſels, a lymphatic fluid, and then the blood.

Thirdly, That the heart begins to act, a conſiderable time before the fœtus is compleatly formed; for, according to Malpighius, this action appeared at the end of the ſecond day: and to Harvey on the third day; and at the ſixth day, the heart appeared to him to have ſenſation; yet, according to the obſervations of both theſe great men, the formation of the whole chick was not compleated till after the fourteenth day of incubation.

Fourthly, That although it be extremely difficult to obtain an ocular demonſtration of the time in which the heart of viviparous animals begins to act, and of the human ſpecies entirely impoſſible; yet, as theſe gentlemen did, in oviparous animals, obſerve that this action was begun in leſs than a day after the rudiments of the heart appeared, even ſeveral days before the heart itſelf had acquired its natural form; we, therefore, may reaſonably conclude, from analogy, that the originating heart of the rabbet ſpecies, diſcovered by De Graaf, and that of the human ſpecies, obſerved by myſelf, had acted alſo, notwithſtanding that their formations were not compleated.

Fifthly, That ſo ſoon as the action of the heart begins, the embryo then becomes an agent in itſelf; for, conſidering the ſtructure of the parts, this action cannot ariſe from the power or force of the mother's heart and arteries; nor can it, in any reſpect, depend upon them, any farther than that the corporeal parts receive nouriſhment by means of the placenta's abſorbing it from the inner ſurface of the uterus.

THE END OF THE FIRST PART.

A NEW

A NEW

# SYSTEM OF MIDWIFERY.

## PART II.

### EXORDIUM.

THE complaints and diſeaſes to which women when pregnant and after child-birth are liable, being chiefly committed (as indeed they ought to be) to the care of the obſtetrick practitioners; it may reaſonably be expected that ſomething ſhould be ſaid concerning them in a work of this kind: I ſhall, therefore, though very unequal to the taſk, venture to claſs them according to the affinity which they ſeem to have with each other, and to the order of time in which they appear; comprehending, in this part, thoſe that happen between conception and the natural time of parturition; and reſerving the remainder, namely, thoſe which happen after delivery, to the fourth and laſt part of this treatiſe.

## CHAP. I.

### OF THE SIGNS OF CONCEPTION, AND DIFFERENT TIMES OF UTERINE GESTATION.

Signs by the countenance; by the ſtomach; by the catamenia.

IN conſequence of conception, the woman's countenance appears ſomewhat pale and dejected; ſhe has commonly a darkiſh caſt below the orbits of the eyes; is uneaſy and ſick at ſtomach; ſometimes retches, eſpecially in the morning; rejects aliments, commonly thoſe which uſed to agree with her; and inſtead of them, particularly after the ſecond month, deſires ſuch with eagerneſs, as before ſhe did utterly diſlike. Some have the menſtrua copiouſly at the firſt period, others have a ſlight ſhew of them at the firſt three or four periods; but moſt naturally they ceaſe entirely as ſoon as conception begins: the breaſts become ſoon tumified; and ſometimes, eſpecially in the firſt pregnancies, there are browniſh circles (called areola) around the nipples.

She has not ſo much fever, nor fluſhing, nor redneſs in the face, nor oppreſſion on the lungs, as uſually attend thoſe who have a ſuppreſſion only of the catamenia. Some are afflicted with hyſtericks till the end of the third month; others with a mictus urinæ, and others have a total ſuppreſſion of it. There is commonly an uneaſineſs or fullneſs in the pelvis, by the ſtretching and enlargement of the uterus, till towards the end of the fourth month, about which time, all or moſt of the complaints go off, the countenance revives, the appetite and the ſtrength return.

Some other ſymptoms have occurred to me, which proving very natural alſo, I ſhall beg leave to inſert the following hiſtory:

A young

A young married lady, a week after her firſt conception (which happened about fourteen days after the menſtrua) felt a pain and pinching in, as ſhe expreſſed it, about the navel, and was chilly. She had a fullneſs in her breaſts; was ſick at the ſtomach; had a great averſion to ſeveral kinds of aliments, which before that time ſhe was fond of: and having miſſed the catamenia twice, ſhe found herſelf warmer than uſual; but for a month longer ſhe was afflicted with ſickneſs at ſtomach, and ſometimes with retchings. She was alſo troubled with a frequency of making water, attended at times with pain; and ſometimes the extruſion of the fæces gave her pain likewiſe. Signs to the end of the third month.

At the end of the fourth month, the ſickneſs and rerchings went off, the appetite returned, ſhe made water with leſs pain, and not ſo often; the breaſts continued full, the conſtitution became ſtill warmer, and the complexion brighter than it had ever been before pregnancy; thus ſhe went on, was delivered at the natural time, and did perfectly well.

§. II. After the fourth month, the fundus uteri riſes to, or ſomewhat above, the brim of the pubes; conſequently a little hardneſs or fullneſs may be felt there near the ſymphyſes, whilſt the reſt of the abdomen, at the ſame time, remains ſoft and natural, eſpecially when the patient lies horizontally. Signs by the riſing of the uterus.

At the fifth month (as Dr. Smellie has rightly obſerved) the fundus aſcends midway to the navel, at the ſeventh month quite to the navel, at the eighth, half way between that and the ſcrobiculum cordis, and at the ninth, as high as the place laſt mentioned; all of which may be known by externally touching the abdomen.

When there are two or more children, the uterus riſes quicker than here mentioned; and in the latter months, the abdomen is bigger and harder about the navel, and ſometimes towards the pit of the ſtomach, Signs to diſcover twins.

ſtomach, than in the former caſe. For this obſervation, ſee Dr. Smellie, vol. iii. page 396.

By the motion of the fœtus.

§. III. The fœtus is ſometimes perceived to move at the end of the third month, and commonly before the beginning of the fifth; after which time, being larger and ſtronger, its movements are more perceptible. There are, nevertheleſs, ſome caſes where the motions are not felt till near the end of the reckoning. At the firſt it moves very obſcurely, giving only a gentle pat now and then in the region of the pelvis, afterwards flutters a little; then kicks more powerfully as it becomes ſtronger, and ſometimes ſo ſuddenly, as to make the mother ſtart with ſurpriſe. Theſe motions aſcend as the uterus riſes, ſo that if ſhe imagines ſhe feels them at the flanks, navel, or upper part of the abdomen, during the firſt three or four months, ſhe is deceived; for, in this caſe, they can only proceed from flatulency or ſpaſmodic contractions, becauſe the uterus is not yet extended to thoſe places.

By the touch in the vagina.

§. IV. About the beginning of the fifth month, the os uteri is a little flattened, and high in the pelvis, and the cervix is a little expanded; which, increaſing as pregnancy advances, extends to the circumference of the pelvis by the ſeventh month; conſequently the orifice, becoming thinner and flatter, by the time of maturity, can ſcarcely be felt; and beſides, it is turned more or leſs backwards towards the os ſacrum. After the ſeventh month, if the point of a finger is held a little time againſt the anterior part of the cervix, viz. between the orifice and os pubis, the head of the child may often be felt bearing againſt that part, and then receding quickly back, as it has liberty to ſwim in the liquor amnii.

Although thoſe ſigns which have been here enumerated, do commonly attend pregnancy, yet women vary ſo much, and even the

ſame perſon in different pregnancies, as to render it difficult, eſpecially in thoſe who are very corpulent, to diſtinguiſh pregnancy from an obſtruction of the catamenia, till the end of the ſixth or ſometimes that of the ſeventh month. Nay, the experienced Lamotte declares, that there are only two infallible ſigns, namely, the motion of the child, and the introduction of the finger into the vagina. Hence, the caution recommended by Dr. Smellie, ſhould be ſtrictly attended to, namely, the difficulty of diſtinguiſhing between obſtruction and pregnancy, in the firſt months, is ſo great, that we ought to be cautious in our opinion, and never preſcribe ſuch remedies as may endanger the fruit of the womb, but rather endeavour to palliate the caſe, and always judge on the charitable ſide, when life or reputation is at ſtake.

CHAP.

## CHAP. II.

### OF THE FIRST COMPLAINTS CONSEQUENT UPON CONCEPTION.

MOST women, eſpecially in their firſt pregnancies, have a preternatural commotion in the fluids, co-evally with conception, accompanied uſually with loathings, reachings and vomitings.

Febris generans. This febrile commotion may, with ſome propriety, be called febris generans; as it probably ariſes from the agency or fermentative power of the ſemen maſculinum. From the ſame cauſe, the apepſia may proceed: for it is obſervable, that the ſtomach is never much diſpoſed for digeſtion, whilſt nature is endeavouring to bring about any important event; as may be ſeen from the time ſhe is affected with the miaſm of a diſeaſe, to that when ſhe has gained the victory.

The retchings and vomitings may ariſe partly from the ſame cauſe, but more eſpecially from a plethora in the veſſels of the ſtomach, occaſioned by the retention of the catamenia; and from the ſympathy of the nerves; for, when the uterus begins to be expanded, its nerves will be ſtimulated much, and conſequently affect thoſe of the ſtomach, ſee Part I. Chap. V. §. VII.

Diagnoſtics. §. II. The febris generans manifeſts itſelf commonly by a quickneſs of the pulſe (though in ſome this is ſcarcely perceptible) a paleneſs, yellowneſs, and ſometimes bloatedneſs of countenance. When the menſes ceaſe, the apepſia, nauſeæ, and vomitings increaſe, and often continue very trouleſome till the end of the third month, ſometimes to that of the fourth; and are not unuſually attended with a degree of fever, more obvious than that which accompanied conception. Now, for the

the moſt part, they ceaſe wholly, probably becauſe the fœtus is ſo large as to require a quantity of fluids nearly equal to that which is retained by the ſuppreſſion.

§. III. Some women ſuſtain all, or moſt of the above complaints, without any phyſical aid, and yet do perfectly well. But when the retching and vomitings are ſo violent and frequent as to prevent a due retention and digeſtion of the aliments, the phyſician's help becomes then neceſſary; becauſe, that little portion of the chyle, which is permitted to paſs through the lacteals, being ſtill crude or ill concocted, and hence defective in the quality as well as quantity, the circulating fluids will ſoon become vitiated, the whole body will grow pale, and ſoon be ſo flaccid, that if not prevented in time, an anaſarca will probably ſucceed to a leucophlegmatia. Prognoſtics.

§. IV. The method of cure may be deduced from what has been ſaid, and may conſiſt chiefly of the following articles, namely, firſt, a ſtrict regularity in the uſe of the non-naturals; ſecondly, bleeding in the arm from ſix to eight ounces, beginning about a week before the ſecond period, repeating it a few days before the next, and ſo on for thrice, or even oftner, if the caſe requires it; thirdly, relieving the ſtomach, if it is very much affected or loaded with crude humours; fourthly, keeping the inteſtinal tube lax and eaſy; and fifthly, if a leucophlegmatia enſues, giving ſuch remedies as will aſſiſt digeſtion, and an expulſion of the redundant ſeroſities, &c. Cure in general.

The purer the air is which ſhe breaths the better; moderate exerciſe is good, provided care is taken not to ſtrain nor ſtretch the body violently, by lifting of heavy weights, &c. nor to expoſe it to concuſſions, by ſudden jolts in a coach upon ſtones, or by falls, &c.

She may indulge herſelf moderately in ſleep; her company ought to be very chearful; and every thing which is diſagreeable, or has any tendency to ſudden ſurprize, muſt of all things be carefully avoided.

The diet ſhould conſiſt of ſuch things as are eaſily digeſted; nevertheleſs, if ſhe long for, or deſires any particular food, though it may have the appearance of being extremely improper, ſhe muſt be indulged, becauſe the denial of ſuch things has cauſed abortion; and on the contrary, inſtances have happened where things have been eat and drank by pregnant women, without any hurt or inconvenience, which, at other times, would have been to them extremely diſagreeable, if not hurtful.

In particular. Conſtitutions and circumſtances are ſo various, that, even in ſo ſlight an illneſs as this, it is almoſt impoſſible to reduce the method of cure to ſet rules and forms; however, for the ſake of the ſtudent, I ſhall give a few examples of ſuch means as I have known moſt effectual and ſalutary; as for inſtance, bleeding, being obſerved as above directed; if about the middle of the ſecond or third month, the ſtomach is much affected with crudities, as often happens, it may be waſhed with a quart or two of warm water, or camomile tea, either alone, or preceded, if occaſion requires it, with pulv. ipecacoan. ab gr. ij. ad iv. vel quinque; which will ſometimes give relief, and even cauſe leſs ſtraining than what is uſually occaſioned by the humours themſelves; this being done, the patient muſt take a paregoric, and remain quiet for ſeveral hours. I muſt here obſerve, that emetics have been deemed dangerous in the time of pregnancy; and that I will not take upon me to ſay they are not ſo, when given in full doſes: but from experience, I will venture to affert, that in giving ſuch as above directed, or even tart. emetic. ab gr. j. and gr. ij. I have known good, but never any evil produced. Since my firſt Edition, further experience confirms me more fully in the ſame practice.

However,

However, to correct the crudities in the ſtomach, and to allay the febrile heat, ſuch a mixture as the following may be given,

I ℞ Succi limoni uncias duas,
Salis abſinthii quantum ſatis ad plenam ſaturationem,
Pulveris e chelis cancrorum compoſiti drachmas duas,
Aquæ puræ uncias quatuor
—— menthæ ſpirituoſæ
Syrupi ſimplicis,
ſingulorum unciam unam;
Miſceantur, et fiat mixtura de qua ſumat cochlearia tria vel quatuor, ter in die, vel ſæpius ſi urgeant nauſeæ et vomitiones.

To open the body occaſionally, and carry off the crudities, the following draught may be given,

II ℞ Magneſiæ albæ drachmam unam,
Pulveris rhei grana duodecim,
Aquæ puræ ſeſcunciam,
Aquæ menthæ ſpirituoſæ,
Syrupi e ſucco aurantiorum,
ſingulorum drachmam unam et dimidiam;
Miſceantur, et fiat hauſtus, primo mane alternis diebus, vel pro re nata ſumendus.

If this draught cannot be retained on the ſtomach in the morning, it may be given an hour or two before noon, or in the evening; and ſhould it not be effectual then, or if the patient has an averſion to

magneſia, ſhe may take either of the following aperients inſtead of it,

III ℞ Tartari ſolubilis drachmas duas,
Mannæ ſemunciam,
ſolve in aquæ puræ ſeſcunciam, dein colaturæ
adde
Aquæ menthæ ſpirituoſæ, drachmas duas;
Miſceantur, et fiat hauſtus mane ſumendus.

IV ℞ Pulveris jalapii grana quindecim,
—— rhei grana quinque,
Salis nitri grana decem,
Aquæ menthæ ſimplicis ſeſcunciam,
—— ſpirituoſæ,
Syrupi Roſarum ſolutivi,
ſingulorum drachmas duas;
Miſce, fiat hauſtus mane ſumendus.

If an electuary be more agreeable, ſhe may take the following, or a ſimilar one.

V ℞ Electarii lenitivi (vel in loco ejuſdem electarii e caſia) uncias duas,
Cremoris tartari ſemunciam,
Pulveris rhei, drachmam unam
et dimidiam,
Syrupi roſarum ſolutivi quantum ſufficit;
Miſceantur, et fiat electarium, de quo capiat quantitatem nucis moſchatæ alternis noctibus, vel ſæpius ſi alvus non ſatis fuerit ſoluta.

If

If the viſcera are diſeaſed, the above means will probably be inſufficient; therefore, in ſuch caſes, recourſe may be had to the following aperients, or ſimilar ones,

VI ℞ Saponis amygdalini drachmas duas,
Pulveris rhabarbari drachmam unam,
— Curcumæ ſeſquidrachmam,
Syrupi ex althæa, quantum ſufficit;
Miſceantur, et fiat maſſa, unde formentur pilulæ duodecim ex ſingulis drachmis, quarum capiat quatuor ſingulis vel alternis noctibus, et mane ſequentibus, ſuperbibendo cochlearia tria vel quatuor mixturæ ſequentis.

VII ℞ Succi limoni uncias duas, ſalis abſinthii quantum ſufficit ad plenam ſaturationem,
Aquæ alexeteriæ ſimplicis uncias quatuor,
— Spirituoſæ,
Syrupi ſimplicis ſingulorum unciam unam;
Miſceantur.

VIII. And finally, ſhould a leucophlegmatia enſue, as above mentioned, the body being firſt deterged with ſuch aperients as thoſe preſcribed; the cure may be continued by giving infuſions and decoctions prepared of the following ingredients, viz. Cortex peruvianus, aurantiorum, et limonum; ſummitates centaurii minoris, radix gentiana, ſerpentaria virginiana, et ſeneka, &c. And moreover, ſal abſinthium, et diureticum, vinum amarum, or tinctura martis in ſpiritu ſalis, &c. may be given as occaſion requires.

CHAP.

## CHAP. III.

## OF THE SECOND CLASS OF DISORDERS WHICH ATTEND PREGNANCY.

Definition. THE ſecond ſeries of complaints ariſing from the pregnant ſtate, are uneaſy ſenſations or pains in and about the pelvis; ſometimes aſcending to the hypogaſtrick region; a frequency of making urine, commonly accompanied with ſome difficulty, pains and forcing down, and ſometimes a total ſuppreſſion enſues, and continues exceedingly troubleſome for ſeveral weeks.

Cauſes. Theſe complaints may ariſe, firſt, from the irritation, and ſtretching of the nerves in the viſcera of the pelvis, occaſioned by the increaſing magnitude of the uterus; ſecondly, from the diſtention of that portion of the peritonæum which makes the external covering to the uterus and veſica urinaria, as deſcribed in Part I. Chap. II. §. VI. which diſtention will not only produce pain, but in ſome reſpect diſturb the natural action of the ſphincter veſicæ; and thirdly, from the preſſure of the uterus againſt or upon the neck of the bladder, &c. When to theſe are added ſtone or gravel, the complaints become worſe, and ſometimes dangerous.

Cure. §. II. They uſually begin in the third month, and ceaſe about the fifth, without any medicinal aſſiſtance. But when the pains are very urgent, and other complaints enſue, eſpecially the ſuppreſſion of urine (or when there is gravel, &c. in the bladder) attention then muſt be given to them; and for this end.

The diet muſt be ſuch as ſerves beſt to ſoften and relax the fibres, as boiled white meats, broths and diluting drinks; and veneſection being

being performed, as directed in the preceding chapter, or as occaſion requires it, the following means may be uſed:

I. ℞. Pulveris gummi arabici drachmam unam,
Aquæ roſarum ſeſquidrachmam, fiat mucilago, cui ſenſim adde,
Olei amygdalini dulcis drachmas tres,
Aquæ roſarum unciam unam,
——nucis moſchatæ,
Syrupi ſimplicis, ſingulorum drachmas duas;
Miſceantur*, et fiat hauſtus, ſexta vel octava quaque hora ſumendus.

A few drops of laud. liquid. ſyden. may be added occaſionally to the evening draught; and when there is need to open the body, ſuch aperients as recommended in Chap. II. §. V. preſcription 3, 4, and 5, may be given, or theſe following:

II. ℞. Mannæ unciam dimidiam, ſolve in aquæ puræ ſeſcunciam, dein adde colaturæ
Olei amygdalini dulcis,
Tincturæ rhabarbari vinoſæ ſingulorum drachmas duas;
Miſce, fiat hauſtus quarta quaque hora ſumendus, donec alvus ſatis fuerit ſoluta.

III. ℞. Electarii lentivi uncias duas,
Pulveris jalapii ſeſquidrachmam,
Olei amygdalini dulcis unciam unam,
Syrupi roſarum quantum ſufficit;
Miſceantur, et fiat electarium, cujus capiat quantitatem nucis moſchatæ nocte maneque vel pro re nata.

* This mixture, in the ſequel, will be called mixtura oleoſa cum gummi.

Enemata

Enemata emollientia may alſo be given with advantage, as occaſion requires: but when a total ſuppreſſion comes on for eighteen or twenty-four hours (or ſooner, if there be a great ſenſe of a diſtention, or univerſal uneaſineſs) immediate recourſe muſt be had to the catheter, which may be paſſed with eaſe, as well as decency, in the following manner:

The manner of paſſing the catheter.

§. III. The woman, being towards the right ſide of the bed, muſt lie on her back, with her knees elevated and kept apart, then the operator muſt kneel at her right ſide, and paſs a warm flat baſon (with the catheter firſt dip't in oil, within it) below the bed cloaths, acroſs under her right ham, and place it with his right hand as near the perinæum as poſſible; this being done he muſt paſs his left hand under the bed cloaths, and down over the pubes, with the fore-finger along the foſſa magna, till it arrives at the lower edge of the meatus urinarius, which may be felt a little prominent about half an inch above the os vaginæ, ſee Part I. Chap. V. §. I. Then he muſt withdraw the finger about a quarter of an inch, take up the catheter with the right hand, paſs its point between the lower edge of the meatus and the point of his left finger, into the urethra, and ſo on into the cavity of the bladder, in which place it will arrive when two inches or two and a half of it have paſſed along the urethra, on which the urine will iſſue forth.

In paſſing it, the point muſt be kept pretty cloſe to the ſymphyſes of the pubes, and the convex ſide of the curvature towards the vagina. When thus introduced, it may be moved about with ſuch caution as not to occaſion pain, by its preſſing againſt the inner ſurface of the bladder; and if there happens to be a ſtone, it will thereby be probably felt.

§. IV. If

When and how to extract a ſtone from the urethra.

§. V. If there is a ſtone, and it happens to reſt againſt the inner orifice of the urethra, ſo as to occaſion a violent irritation on that part, or a ſuppreſſion of the urine, it may be moved back into the cavity of the bladder by the point of the inſtrument. This being done, and the urine diſcharged, the catheter may be withdrawn, the handle being raiſed gently as it comes along. If the ſtone happens to be forced into the urethra, and to be arrived ſo near to the external orifice, that it may be extracted without the danger of laceration, or the bringing on of violent forcing pains; the operation may be performed in manner following:

The patient being placed either on her back with the knees apart, or on her left ſide, the operator muſt paſs the fore-finger of his left hand (dipt firſt in oil) along the vagina, till its point gets above the ſtone, which will be eaſily felt, and thereby kept gently down towards the outer orifice, whilſt he paſſes, with his right hand, a ſmall pair of forceps * (dipt alſo in oil) along the urethra till they arrive at the ſtone; which then muſt be laid hold of, and extracted with due caution and deliberation. When it has been forced by the urine and ſtrainings, &c. ſo near the external orifice as above obſerved, the operation is ſeldom attended with danger, or much difficulty: but when it is lodged near the inner orifice, if a ſmall catheter, &c, cannot paſs by it into the bladder with eaſe and ſafety, to give exit to the urine, until it can be waſhed or forced farther on, it muſt then be puſhed back into the bladder by the catheter, and the operation deferred till the patient is perfectly recovered from parturition; for violent pains and ſtrainings at this time, might occaſion an abortion, and thereby bring on ſome fatal conſequences.

* Plate IX. fig. 1.

When the urine has been retained twenty-four or thirty hours, it is ſometimes near two quarts in quantity, and commonly

very high coloured. The bladder being once emptied, the patient muſt endeavour to make water now and then, before it becomes diſtended again. If ſhe does not ſucceed, the operation muſt be repeated, as occaſion requires; but never, if nature can help herſelf in leſs time than twenty hours, or thereabouts; excepting the ſymptoms are very urgent.

CHAP.

## CHAP. IV.

## OF THE THIRD SERIES OF COMPLAINTS ARISING FROM PREGNANCY.

THE third claſs of complaints, ariſing from uterine geſtation, are cholic pains (called ſometimes ſpurious labour) which very often happen towards the full reckoning, and torment the patient ſo violently, as to be taken for real labour, both by the patient herſelf, and thoſe who attend her. Definitions.

Sundry cauſes concur in the production and aggravation of thoſe complaints; as, pains from the ſtretching of the uterus; the preſſure of it on the adjacent parts, eſpecially if they happen to be diſeaſed; the altered poſition of the abdominal viſcera, occaſioned by the encreaſe of the uterus; for, as it riſes in the cavity, the meſentery and meſocolon recede before it, till, reflecting upon the liver, ſtomach, and ſpleen, the inteſtines are gathered into a bundle, both above and on each ſide of it, whereby their periſtaltick motions become impeded, not only from their inverted poſition, but by the preſſure alſo they ſuſtain. Hence, the fœces ſliding ſlowly through them, accumulating into indurated lumps, which plug them up, and diſtend them; collecting alſo putrid and elaſtic air in the interſtices, which becoming more and more rarified, ſtretches and irritates them ſo greatly, as to bring on very violent pains. And laſtly, from the tube's being vellicated by bile, or other acrid humours flowing into it, either from the ſtomach or liver, &c. and perhaps the cauſe of natural parturition beginning to operate alſo. Cauſes.

Diagnoſtics. §. II. Theſe complaints are commonly uſhered in as follows; an oppreſſed pulſe; a chillineſs; ſometimes a ſickneſs at ſtomach, and vomiting of yellow or green bile; a great uneaſineſs over the whole abdomen, the chief pain being ſometimes confined to one part, but more commonly ſhifting, as for inſtance, running acroſs the loins, ſometimes to the right ilium; commonly from the right hypochondrium, acroſs the cavity between the ſtomach and fundus uteri to the left hypochondrium.

During the fit, the patient makes water in ſmall quantities, and very frequently; ſmall and griping ſtools are voided; but oftener a coſtive habit of body has preceded, and ſtill continues.

It is very common, eſpecially near the latter end of pregnancy, to find a conatus, or bearing down of the uterus, brought on by theſe pains, reſembling that of real labour: nay, I have met with the os uteri dilated above the breadth of half a crown, and the child's head forcing both it and the neck of the uterus down below the middle of the pelvis with great violence, even ſo early as two months before the completion of pregnancy; but then I always obſerved, that the edges of the orifice were thicker and harder than what they uſually are at the beginning of labour; and that a few hours being elapſed, the orifice was rather contracted than opened.

Although obſtetrick practitioners have greatly the advantage of others in diſtinguiſhing this diſorder from real labour, by the help of the touch; hence, perſons proper to be conſulted; nevertheleſs, when theſe cholicks happen in a few days, or even weeks before the expected time of child-birth, the taſk is ſometimes ſo very difficult, that practitioners of conſiderable experience may be deceived; and therefore, ought not to be precipitate either in their prognoſtications or method of cure.

However, let the complaints be ever ſo urgent, the woman having pains, and ſcreaming out as if ſhe was in real labour, if the vagina

begins

begins not to open; if there is no diſcharge of mucus; if the os uteri remains prominent, thick, or entirely ſhut, eſpecially if it be now ſix or eight hours ſince the attack, and the uneaſineſs or pains continue without ceaſing, it may be taken for granted that true labour is not begun.

§. III. When a healthy ſtate of body has preceded, and the patient has not been ſubject to violent coſtiveneſs, miſcarriages, or convulſions, &c. and when they happen at any time before the ſeventh month, they uſually yield very readily to the remedies. Prognoſtics.

But when they happen after the ſeventh month, and the patient has been ſubject to the inconveniencies above-mentioned, they do not give way ſo eaſily; therefore, the method of cure muſt be conducted with more caution, eſpecially the nearer that it is to the time of the full reckoning.

§. IV. Soft and liquid diet muſt be uſed; meat or any kind of ſolid food being taken but very ſparingly, till a day or two after the diſorder is removed. Cure.

Bleeding in the arm, unleſs weakneſs or other circumſtances forbid it, may begin the cure with advantage; ſecondly, the ſtomach and inteſtines muſt be cleared of crude or foul humours; and thirdly, eaſe obtained by anodynes; after which, the body muſt be kept lax to prevent a return of the complaints.

If the ſtomach is greatly oppreſſed with vitiated humours, which ſometimes are of a dark or browniſh colour, it may be waſhed at any time of pregnancy with camomile tea, as this will excite vomiting no longer than whilſt it is drank, and frequently not then, till the fauces are tickled with a finger or feather.

When an enema can be complied with, it ſhould be adminiſtered; and after it has operated, an anodyne ſhould be given, and quietneſs injoined.

injoined. But if the enema is refuſed (as ſometimes unfortunately happens) from the obſtinacy of the patient; or if both it and the paregoric have been given, and the pain ſtill continues, recourſe muſt be had to ſuch lenient purgatives as theſe following:

I ℞ Tincturæ rhabarbaræ vinoſæ ſeſcunciam
Syrupi roſarum ſolutivi drachmas duas;
Miſce, fiat hauſtus ſtatim ſumendus.

Vel,

II ℞ Tartari ſolubilis ſeſquidrachmam,
Pulveris rhei grana quindecim,
Aquæ alexiteriæ ſimplicis ſeſcunciam
ſpirituoſæ,
Syrupi violarum,
Singulorum drachmas duas;
Miſceantur, et fiat hauſtus ſtatim ſumendus, et poſt horas duas repetendus.

Vel,

III ℞ Pulveris jalapii ſcrupulam unam,
—— Zingiberis grana quinque,
Salis nitri grana decem,
Aquæ menthæ piperitidis ſimplicis
Seſcunciam,
—— Spirituoſæ,
Syrupi roſarum ſolutivi,
Singulorum drachmas duas;
Miſce, fiat hauſtus.

Vel,

Vel,

IV ℞ Salis Glauberi drachmas ſex,
Mannæ unciam unam
ſolve in aquæ hordeatæ uncias ſeptem,
deinde colaturæ adde
Tincturæ ſennæ unciam unam;
Miſceantur, et fiat apozema de quo capiat cochlearia tria, vel quatuor, ſecunda, vel tertia quaque hora donec alvus ſemel vel bis reſpondeat.

If pills be more agreeable to the patient,

V ℞ Pulveris jalapii ſcrupulum unum,
Olei Carui guttas duas,
Syrupi ex althæa quantum ſatis;
Fiant pilulæ quinque, quarum capiat unam omni hora donec alvus ſatis ſolvatur.

As ſoon as a ſtool is obtained by any of the above means, the patient muſt drink freely of weak broth, or rather thick and ſmooth gruel, by which the inteſtinal tube will be duly repleniſhed, the acrimonious humours diluted, and the parts which were diſtended and vellicated, now fomented and cheriſhed. When three or four ſtools have been obtained, the patient may then take a ſoft anodyne, and repeat it as occaſion requires; during which time, ſhe muſt be kept extremely quiet, and free from company. After this, to keep the body open, and to prevent a relapſe, ſuch as the following lenients may be given:

VI ℞

VI ℞ Electarii e caſia uncias duas,
Pulveris rhei drachmam unam,
Olei amygdalarum dulcium unciam unam,
Carui guttas decem,
Syrupi roſarum ſolutivi quantum ſatis;
Miſceantur, et fiat electarium de quo capiat quantitatem nucis moſchatæ nocte maneque adſtrictione alvi urgente.

Vel,

VII ℞ Olei amygdalini dulcis,
Mannæ optimæ,
ſingulorum unciam dimidiam,
ſolve ſimul in vitello ovi
quantum ſufficit, dein adde
Tincturæ rhabarbari vinoſæ
drachmas tres;
Miſceantur, et fiat hauſtus quarta quaque hora ſumendus donec alvus ſatis ſoluta fuerit.

When theſe complaints ariſe from obſtructions in the liver, or from any other of the abdominal viſcera, ſuch medicine as recommended (Chap. II. §. IV. preſcription 6 and 7.) may then be given, eſpecially after the above means have been uſed.

CHAP.

## CHAP. V.

### OF THE FOURTH CLASS OF DISORDERS WHICH SOMETIMES ATTEND PREGNANCY.

IT is not unuſual for women, eſpecially towards the latter months, to be troubled with varices; that is, the veins here and there give way, and enlarge ſo much as to form tumors. Theſe dilatations may happen in any part of the body, but moſt frequently in certain parts of its ſurface; as for inſtance, in the exterior veins of the legs, thighs, anus (where they are called hæmorrhoides), abdomen, and ſometimes breaſts. Definition.

The cauſes which produce them, though various, may be reduced to the following, namely, firſt, a general laxity of the vaſcular ſyſtem; ſecondly, an obſtruction in the abdominal viſcera, eſpecially in the liver and meſentery, whereby the free and natural reflux of the blood, from the lower extremities to the heart, is impeded; thirdly, the preſſure of the uterus, either upon theſe viſcera, or upon the larger veins, as the iliacs and vena cava aſcendens, &c. fourthly, any violent exerciſe, eſpecially when the woman is obliged to ſtand much; fifthly, and more particularly, when to any of the above a plethora is added. Cauſes.

§. II. Theſe varices manifeſt themſelves by raiſing the cutis into eminencies, which are very ſoft and yielding; even diſappearing by gentle preſſure, and riſing again as that is taken away. They are uſually of an azure or blue colour; and a little above and below them, the veins are commonly knotty, ſometimes winding, and generally enlarged beyond their natural ſizes. Diagnoſtics.

Prognoſtics. §. III. They are commonly not dangerous, eſpecially if the cauſes which produce them be early removed, and the coats of the veſſels conſequently relieved before they have ſuſtained ſo long a diſtention as to be rendered unable to regain their priſtine or natural ſtate. But when they have been of very long ſtanding, the cure is not only difficult, but it ſometimes alſo happens, eſpecially when they are ſeated in the larger veſſels, that they burſt and bleed ſo very copiouſly as to become dangerous, if proper aſſiſtance is not immediately had.

Regimen. §. IV. The regimen muſt be ſuited to the cauſes; that is, if the diſorder depends on a general laxity of the veſſels, cool and open air is good, and an aſtringing, drying, and nouriſhing diet, with moderate exerciſe.

But if from obſtructions or preſſure, &c. the diet muſt conſiſt of the ſoft diluent, and aperient kinds; and during the intervals of gentle exerciſe, the patient muſt often reſt by lying on one ſide, either upon a bed or couch.

Cure. §. V. The method of cure alſo muſt be ſuited to the cauſes, as for inſtance, when the diſorder proceeds from the laxity of the vaſcular ſyſtem, then ſtomachic and corroborative medicines may be uſed; as for example, cortex peruvianus, aurantiorum, ſummitates centaurii minoris, elixir vitrioli myniſchti, and tinct. mart. in ſp. ſal. &c. But when from obſtructions in the viſcera, &c. then thoſe medicines which are aperient and attenuating muſt be given; as for example, ſapo amygdalinus, ſapo ex oleo olivarum, tartarum vitriolatum, ſal abſinthii, ſal diureticus; mixtura ſalina, and manna, &c. As to externals, the ſame kinds will anſwer in both caſes; for the whole intention here, is to brace and conſtringe the lax and dilated part of the vein, and the cutis above it; to which end, the following decoction and cataplaſm may be uſed with ſome advantage.

I ℞ Corticis granatorum,
querci contuſi,
Singulorum unciam unam,
coque in aquæ ferrariæ libras tres
ad ſeſquilibram; dein colaturæ adde
Aluminis rupei drachmas duas,
Vini florentini uncias quatuor:
Miſceantur, et fiat fotus frigidè utendus.

Linen compreſſes may alſo be wet in this mixture, or fotus, and bound on the affected part by a roller. Theſe muſt be applied very ſmoothly, and renewed twice a day.

II ℞ Aluminis rupei uncias duas,
Farinæ avenaceæ,
Boli armenæ,
Singulorum uncias quatuor,
Vini rubri quantum ſufficit;
Miſceantur, et fiat cataplaſma frigidè applicandum
et renovandum, ſecunda vel tertia quaque die.

Dr. Ball recommends a cataplaſm like this for the bleeding piles; I have not as yet uſed it for that purpoſe, but believe it may be uſeful in ſuch caſes; at leaſt, conſidering the compoſition, it bids fair for it. Strengthening plaiſters may be uſed likewiſe, with compreſſes and rollers over them.

When a hæmorrhage enſues, it is uſually ſtopped by dry lint, a compreſs and roller. On the third or fourth day afterwards, digeſtion comes on; the ruptured part incarns, cicatrizes, and is uſually healed in the common way.

But if the veſſel is very large, and the hæmorrhage cannot be ſtopped in the above manner, or by any aſtringent applications, the integuments then muſt be divided to a little diſtance below the bleeding orifice, the veſſel laid bare, and taken up by the needle and ligature; which being done, the wound will digeſt, and the cure be compleated in the ordinary way.

My friend, Mr. Ranby, ſays, that he ſaw once a very large varex, which had been opened by the lancet, the conſequence of which was, a great difficulty both in ſtopping the hæmorrhage, and in healing the aperture; and that after it was healed, the varex became larger than ever. He recommends flannel rollers inſtead of linen ones.

§. IV. I have known no means that give more relief in the hæmorrhoidal paroxiſms than bleeding frequently in ſmall quantities; and as the blood which is taken away is for the moſt part ſizy, coolers, aperients, demulcents, and anodynes are to be given at proper intervals; as for example, ſal nitri, mixtura ſalina, mixtura oleoſa cum gummi, ſpermaceti, ſyrupus diacodion, and tinctura thebaica, &c. To keep the body laxative, ſuch aperients as recommended in Chap. IV. §. IV. preſcription 5, 6, and 7, may be taken. And as to externals,

Externals.

III ℞ Olei amygdalini dulcis unciam unam,
eſſentialis ſuccini ſemunciam,
Tincturæ thebaicæ drachmas duas;
Miſce, fiat embrocatio applicanda bis terve in die.

IV ℞

Vel,

℞ Unguenti ſambucini unciam unam,
Linimenti ſaponacei unciam demidiam,
Tincturæ thebaicæ drachmas duas;
Miſceantur, et fiat linimentum quocum inungantur
partes affectæ bis terve in die.

And immediately after the application, either of the embrocation or liniment, let the parts affected be covered with a cataplaſm of bread, milk and oil.

§. VII. An impoſthumation ſometimes happens near the anus; a caſe of which kind I had in 1765, viz. a young married lady, in the ſeventh week before the time of her reckoning, had an abſceſs formed, which extended from the middle of one labium to the ſide of the anus, and a little behind it.

I laid it open by an inciſion of about three inches in length, running along the ſide of the perinæum to the ſide of the anus, whereby a freedom of diſcharge was perfectly obtained, though the cavity extended much farther. The applications firſt uſed were balſ. terebinth. ol. virid. ana p. æ. which digeſtive being made agreeably warm, a ſoft piece of lint was dipped in it, and laid within the edges of the wound, and over this an emollient cataplaſm was immediately applied. Theſe applications were renewed twice a day for near a fortnight, by the expiration of which time, the cavity, which had contained the pus, was contracted almoſt to the edges of the aperture; the inner ſurface was deterged; the granulations appeared kindly; and the ſurrounding hardneſs was entirely gone. The cataplaſm now was the only dreſſing made uſe of, and being continued about a week without any other, it was then laid aſide, and the wound cicatrized with ceratum epuloticum ſpread upon lint.

The

The cure was compleated in leſs than a month, the patient went her full time, was ſafely delivered, and ſtill enjoys a very good ſtate of health. I muſt further obſerve, that during the cure, the body was duly opened by ſoft aperients, as thoſe above-mentioned.

In 1766, I had another caſe, about the ſeventh month of pregnancy, in which one labium was greatly tumified, and a fluctuation of fluid to be felt extending to the perinæum; I made an opening with the lancet; a large quantity of black blood was diſcharged; the ſwelling ſubſided; the patient went her full time, and did very well.

## CHAP. VI.

## OF THE FIFTH AND LAST CLASS OF COMPLAINTS THAT SOMETIMES ARISE FROM UTERINE GESTATION.

Swellings of the lower extremities.

TUmefactions of the lower limbs happen alſo to ſome women after the fourth month.

Cauſes.

Theſe may ariſe from a plethoric habit of body, the reflux of the blood to the heart being impeded by the preſſure of the uterus upon the adjacent parts; much labour or exerciſe; the body being kept erect during that time; a native debility of the fabric itſelf; obſtructions and diſeaſes of the lungs, or abdominal viſcera; or a deficiency in ſecretion of the urine, and expulſion of the fœces, &c.

Diagnoſtics.

§. II. When the diſorder is cauſed by preſſure and plethora, the complexion is uſually florid, and the body healthy; the ſpine is uſually pretty ſtraight; the angle of the ſacrum not projecting much over the pelvis, ſo that the poſterior ſide of the uterus lies flat againſt the iliacs, and vena cava aſcendens; the legs, at firſt, grow uneaſy and ſtiff, towards night they ſwell a little, but by morning recover their priſtine ſtate.

As the uterus enlarges, the ſwellings of the legs increaſe; ſo that in proceſs of time, not being ſufficiently aſſwaged in the morning to relieve the veſſels, by the evening they grow ſtill more painful, red and inflamed. Before the end of the reckoning, if no aſſiſtance be given, the veſſels being continually on the ſtretch, the lymphatics give way and burſt; the lymph extravaſates; the redneſs of the ſkin grows paler, at laſt goes of; the ſwellings increaſe, aſcend; and, when preſſed upon, remain pitted.

Part of the extravaſated lymph being now abſorbed, and taken up by the circulating fluids, contaminates, by degrees, the whole maſs; and the blood and other juices, thus blended, having loſt their firmneſs, the ſolids likewiſe become feeble and unable to perform their functions.

The complexion now grows pale; the whole habit leucophlegmatic; and, in ſhort, the diſorder ſtill aſcending, not only the thighs and labia pudendi, but the whole body become ſwelled: a remarkable inſtance of which fell under my care in 1763, namely, a young woman, who was naturally very ſtrong and healthy, yet, in the firſt pregnancy, became ſo compleatly anaſarcous, that the labour being very lingering, and ſhe, for about twelve hours, not being able to riſe from the bed *, the ſwellings of the legs, thighs, and labia pudendi, &c. indeed leſſened; but then, the arms, neck, face, and whole head became ſwelled to an amazing degree.

When the diſorder ariſes from obſtructions and diſeaſes of the viſcera, or a general laxity of the frame, the ſymptoms attending ſuch muſt have preceded; and beſides, the patient now appears pale and ſickly; the limbs, at firſt, are not ſo red and inflamed as in the former caſe, but ſooner ſwell, become oedomatous and very pulpy. The reaſon of ſo quick a progreſs, appears from what has been ſaid concerning thoſe ſwellings which ariſe from plethora and preſſure.

Prognoſtics. §. III. If the patient is young, and the tumefactions ariſe from plethora and preſſure, they either give place to remedies, or keep ſo much under as not to be extremely hurtful to the conſtitution, and after parturition diſappear uſually without much inconveniency.

But if ſhe is near the meridian of life, and they proceed from obſtructions, or a laxity, &c. they often reſiſt the power of medicines ſo

* It may be neceſſary to obſerve, that ſhe had three children at this birth.

much

much, that by the time ſhe is delivered, the whole fabric is ſo greatly enfeebled and ſhattered, that if ſhe ſurvives the lying-in, her health recovers (for the moſt part) but very ſlowly and imperfectly.

§. IV. As to thoſe ariſing from plethora, &c. the diet muſt be cooling and aperient; but if from a debilitated fabric, it muſt be more balmy and nouriſhing: in both caſes, briſk air and gentle exerciſe are good. At times ſhe muſt lie on either ſide, either on a couch or bed; and obſerve alſo to garter as looſely as poſſible. Cure. Aliments.

In the cure, reſpect muſt be had likewiſe to the cauſes; for if the ſwellings ariſe from either plethora, preſſure, obſtructions, or diſeaſes in the viſcera, and are but juſt begun, blood may be taken from the arm to ſix or eight ounces, and repeated according to the ſtrength and occaſion; after which, the inteſtinal tube muſt be kept free and eaſy, with ſuch aperients as in Chap. II. Medicaments.

But if they proceed from a laxity or debility of the whole conſtitution, then corroboratives are proper. As to externals, the ſkin ſhould be kept very clean, by waſhing the legs and feet with bran or ſoap and water, taking care to keep them but a ſhort time in the fotus, to rub them quickly dry, and keep them extremely warm, whereby perſpiration may be encouraged as much as poſſible: next morning, while the ſwellings are down, any ſtrengthening embrocation may be uſed.

## CHAP. VII.

## OF THE VENEREAL DISEASE.

AS this diſeaſe, when happening in pregnancy, may become deſtructive to mother and child, if not timely prevented by proper remedies, I ſhall hope to be excuſed, in taking ſome notice of it here. In doing this, I ſhall not depend ſo much on my own judgment, as on that of others; who have had more extenſive practice in this branch, and who have alſo wrote fully upon it. Amongſt thoſe Writers, I think the Public are particularly obliged to Mr. Benjamin Bell, of Edinburgh; and the celebrated John Hunter, of London; eſpecially to the latter, his work being the reſult of many curious and very accurate obſervations, as well as of a long ſeries of ſucceſsful practice.

In Page 11, treating on the poiſon which conſtitutes this diſeaſe; He ſays; "It is commonly in the form of pus, or united therewith, "or ſome ſuch ſecretion, and produces a ſimilar matter in others, "which ſhews that it is moſt generally, although not neceſſarily, a "conſequence of inflammation. It produces or excites therefore, in "moſt caſes an inflammation in the parts contaminated; beſides "which inflammation, the parts ſo contaminated have a peculiar mode "of action ſuperadded, different from all other actions attending in-"flammation; and it is this ſpecific mode of action, which produces "the ſpecific quality in the matter. It is not neceſſary that inflam-"mation ſhould be preſent to keep up this peculiar mode of action, "becauſe the poiſon continues to be formed long after all ſigns of in-"flammation have ceaſed. This appears from the following facts; "Men having only what is called a gleet or healing chancre, give the

"diſeaſe

" diſeaſe to found women: and many venereal gonorrhœas happen
" without any viſible ſigns of inflammation.

" In women the inflammation is frequently very ſlight, and often
" there is not the leaſt ſign of it; for they have been known to infect
" men, though they themſelves have had no ſymptoms of inflam-
" mation, or of the diſeaſe in any form. Therefore the inflammation,
" and ſuppuration, when preſent, are only attendants on the peculiar
" mode of action; the degree in which they take place depending
" more on the nature of the conſtitution than on that of the poiſon.

" The formation of matter alſo, though a very general, is not a con-
" ſtant attendant on this diſeaſe; for we ſometimes find inflammation
" produced by the venereal poiſon which does not terminate in ſup-
" puration; ſuch inflammation, I ſuſpect to be of the eryſipelatous
" kind. It is the matter produced, whether with or without inflam-
" mation, which alone contains the poiſon; for without the forma-
" tion of matter, no venereal poiſon can exiſt. Therefore a perſon
" having the venereal irritation in any form, not attended with a diſ-
" charge, cannot communicate the diſeaſe to another. To communi-
" cate the diſeaſe therefore it is neceſſary that the venereal action ſhould
" firſt take place; that matter ſhould be formed in conſequence of that
" action; and that the matter ſhould be applied to a ſound perſon or
" part.

" That the venereal diſeaſe is to be propagated only by matter, is
" proved every day by a thouſand inſtances. Married men contract
" the diſeaſe, and, not ſuſpecting they have caught it, cohabit with
" their wives, even for weeks. Upon diſcovering ſymptoms of the diſ-
" eaſe, they of courſe deſiſt. Yet in all my practice I never once found
" that the complaint was communicated under ſuch circumſtances,
" except where they had not been very attentive to the ſymptoms, and
" therefore continued the connection after the diſcharge had ap-

" peared. I have gone ſo far as to allow huſbands to cohabit with " their wives in order to ſave appearances, and always with ſafety.

" The matter which is inpregnated with this poiſon, when it " comes in contact with a living part, irritates that part, and inflam- " mation is the common conſequence. It muſt be applied either in a " fluid ſtate, or rendered fluid by the juices of the part to which it " is applied. There is no inſtance where it has given the infection in " the form of vapor, as is the caſe of many other poiſons." — In Page 13, he ſays, " We find from experience, there is no difference in " the kind of matter; and no variation can ariſe in the diſeaſe from the " matter's being of different degrees of ſtrength; for it appears, that " the ſame matter affects very differently different people. Two men " having been connected with one woman, and both catching the diſ- " eaſe, one of them ſhall have a violent gonorrhœa or chancre, while " the other ſhall have merely a ſlight gonorrhœa. I have known one " man give the diſeaſe to different women, and ſome of the women have " had it very ſeverely, while in others it has been very ſlight. The " ſame reaſon holds good with regard to chancres. The variations " of the ſymptoms in different perſons depend upon the conſtitution " and habit of the patient at the time.—It has been ſuppoſed by many " that the gonorrhœa and chancre ariſe from two diſtinct poiſons; " and their opinion ſeems to have ſome foundation, when we conſider " only the different appearances of the two diſeaſes, and the different " methods of cure; which in judging of the nature of many diſeaſes is " too often all we have to go by. Yet if we take up this queſtion up- " on other grounds, and alſo have recourſe to experiments, the reſult " of which we can abſolutely depend upon, we ſhall find this notion " to be erroneous." In Page 23, he ſays, " The venereal poiſon is " capable of affecting the human body in two different ways; " locally, that is, in thoſe parts only to which it is firſt applied;

" and

"and conſtitutionally, that is, in conſequence of the abſorption of the "venereal pus which affects parts while diffuſed in the circulation. "Between the firſt and ſecond of thoſe ways mentioned, certain in- "termediate complaints take place in the progreſs of abſorption; theſe "are inflammations and ſuppurations, forming what are called buboes, "in which the matter is of the ſame nature with that of the original "diſeaſe. When the matter has got into the conſtitution, and is cir- "culating with the blood, it there irritates to action; and, from that "irritation produces many local diſeaſes, as blotches on the ſkin, ul- "cers in the tonſils, thickening of the perioſteum and bones. The lo- "cal or firſt kind, is what I have called immediate, ariſing directly "upon the application of venereal pus. Of this kind there are two "ſorts, ſeemingly very different from one another. In the firſt there "is a formation of matter without a breach in the ſolids, called a Go- "norrhœa. In the ſecond there is a breach in the ſolids, called a "chancre. Neither of theſe two ways, in which the diſeaſe ſhews itſelf, "is owing to any thing peculiar in the kind of poiſon applied, but to "the difference in the parts contaminated. The readineſs with which the "parts run into violent action, in this ſpecies of inflammation, is greater "or leſs according to the nature of the parts affected; which perhaps "does not ariſe from any ſpecific difference in the parts, but is accord- "ing to the common principle of ſenſibility and irritability; for we "find, that the vagina is not ſo much diſpoſed to inflammation in this "diſeaſe, as the urethra is in the ſame ſex, becauſe it is not ſo ſenſible."

In Page 29, Part II. Chap. I. he ſays, "When an irritating matter of "any kind is applied to a ſecreting ſurface, it increaſes that ſecretion, "and changes it from its natural ſtate (whatever that be) to ſome "other, which in the preſent diſeaſe is a pus; and which, taking place "in the urethra, is called a gonorrhœa."—In Pape 62, he ſays, "The venereal diſeaſe, in the form of gonorrhœa in women, is not ſo

" complicated as in men; the parts affected are more ſimple and " fewer in number: But it is not ſo eaſily known in them as in men, " becauſe the parts commonly affected in women are very ſubject to a " diſeaſe reſembling the gonorrhœa, called fluor albus; and the diſtin- " guiſhing marks, if there are any, have not yet been completely aſ- " certained. A diſcharge ſimply from theſe parts in women, is leſs a " proof of the exiſtence of the venereal infection, than even a diſcharge " without pain in men; therefore in general little or no attantion is " paid to it by the patient herſelf; and we often find the venereal virus " formed in thoſe parts without any increaſe of the natural diſcharge. " The kind of matter gives us no aſſiſtance in diſtinguiſhing the two " diſeaſes; for it often happens, that the diſcharge in the fluor albus " puts on all the appearances of the venereal matter; and an increaſe " of the diſcharge is no better mark, whereby we can diſtinguiſh the " one from the other. Pain, or any peculiarity in the ſenſations of " the parts, is not a neceſſary attendant upon this complaint in wo- " men; therefore not to be looked for as a diſtinguiſhing ſymptom.

" The appearances of the parts often give us but little information; " for I have frequently examined the parts of thoſe, who confeſſed all " the ſymptoms, ſuch as increaſe of diſcharge, pain in making water, " ſoreneſs in walking, or when they were touched, yet I could ſee no " difference between theſe and ſound parts. I know of no other way " of judging, in caſes where there are no ſymptoms ſenſible to the per- " ſon herſelf, or where the patient has a mind to deny having any un- " common ſymptoms, but from the circumſtances preceding the diſ- " charge; ſuch as her having been connected with any perſon ſuppoſed " to be unſound, or her being able to give it to others; which laſt " circumſtance being derived from the teſtimony of another perſon, is " not always to be truſted to, for very obvious reaſons. Thus a wo- " man may have this ſpecies of the venereal diſeaſe without knowing

" it

" it herſelf, or without the ſurgeon being able to diſcover it, even on " inſpection. It may appear very ſtrange, that a diſeaſe, which is ſo " violent and well marked in men, ſhould be ſo obſcure in women: " but when we conſider that this poiſon generally produces ſymptoms " according to the nature of the parts affected by it; it becomes an " eaſy matter to account in ſome meaſure for this difference. When " we attend to the manner in which this diſeaſe is contracted by wo- " men, it is evident that it muſt principally attack the vagina, a part " that is not endowed with much ſenſation, or action of any kind. " When it extends farther it becomes the cauſe of diſagreeable feel- " ings, producing a conſiderable ſoreneſs in all the parts formed for " ſenſation, ſuch as the inſide of the labia, nymphæ, clitoris, caruncula " myrtiformes, the orifice of the meatus urinarius, and often affecting " that canal in its whole length."

Treating of chancres in women, ſee Page 225, he ſays; " Theſe ul- " cers that are formed on the inſide of the labia, nymphæ, &c. are never " allowed to dry or ſcab; but thoſe on the outſide of the labia, " &c. are ſubject to have the matter dry upon them, which forms a " ſcab upon them ſimilar to thoſe on the body of the penis or ſcrotum. " The venereal matter from ſuch ſores is very apt to run down the pe- " rinæum to the anus, as in a gonorrhœa, and excoriate the parts, eſ- " pecially about the anus, where the ſkin is thin, often producing chan- " cres on thoſe parts. Chancres have been obſerved in the vagina, " which I ſuſpect not to have been original ones, but to have ariſen " from the ſpreading of the ulcers on the inſide of the labia. This " form of the diſeaſe, like the gonorrhœa, both in women and men, " is entirely local, the conſtitution having no connection with it, but " ſympathetically, and I believe much more ſeldom in this than in " the former."

With

With reſpect to the diſtinguiſhing marks of chancres, thoſe given by Meſſ. Bell and Hunter are nearly ſimilar. Mr. Bell, in his treatiſe, Page 383, ſays; "They appear at firſt ſmall milliary ſpots, which ſoon riſe "and form little veſicles, that, upon burſting, diſcharge ſometimes a "thin watery fluid; and, on other occaſions, a more thick yellow mat-"ter; the edges of ſuch ſores are generally hard and painful; and are "commonly attended with more or leſs inflammation."

Mr. Hunter, Page 215, deſcribes them as follows, "Venereal "ulcers commonly have one character, which however is not entirely "peculiar to them, for many ſores that have no diſpoſition to heal, "which is the caſe with a chancre, have ſo far the ſame character. "A chancre has commonly a thickened baſe, and although in ſome "the common inflammation ſpreads much farther, yet the ſpecefic is "confined to this baſe."

Mr. Bell, ſpeaking of ulcers ariſing from an old infection, and commonly appearing above the bones, eſpecially ſuch as are moſt thinly covered with muſcles, ſays, "They firſt appear in the form of a red "and ſomewhat purpliſh efflorescence, not circumſcribed, but in ge-"neral rather conſiderably diffuſed. This ſoon comes to riſe into a "number of very ſmall puſtules, which ooze a thin fretting ſerum. "At firſt theſe puſtules, when obſerved through a glaſs, appear per-"fectly diſtinct, but they at laſt run together, and form one large "ulcer, whoſe edges are commonly ragged, and ſomewhat callous; "and there is generally a light red appearance, which extends a con-"ſiderable ſpace beyond the ſore, over the ſkin that does not ſeem to "be otherwiſe diſeaſed. Sores of this kind have frequently a very "remarkable appearance, being hollowed as it were, into the form of "a cup, generally narrow and contracted at the bottom, with the "edges extending gradually till they reach the outward circumference.

"This,

" This, at leaſt is commonly the caſe, except when carious bones
" happen to lie at the bottom of the ſores; and then they are generally
" filled up with troubleſome funguous excreſſences."

§. II. Profeſſor Hamilton, of the Univerſity of Edinburgh, (ſee his Outlines of Midwifery, Page 174,) ſays, "The proper time to enter on a " courſe, is between the third and ſixth month." This is certainly the beſt time; but to prevent injury to mother and child as much as poſſible, I think ſuitable means of relief ſhould not be omitted, even after the ſeventh month: For, although the diſeaſe may prove ſo virulent, as not to be entirely eradicated during this time of pregnancy, yet it may be alleviated ſo much, as to admit of being perfectly cured after the woman's lying-in, and the child alſo may ſometimes eſcape with little or no hurt. Should it indeed happen, that the woman is very unhealthy, and apt to miſcarry, the probability of ſaving the child becomes leſs, and an abortion, moſt likely, will enſue. Prognoſtics.

§. III. With reſpect to regimen, the patient may be indulged with ſuch eatables as ſhe deſires moſt; but as to drinkables, ſhe muſt abſtain from ſpirits of every kind. She muſt keep quiet, for exerciſe will heat and irritate the parts; and if ſhe gets cold, or contracts any other illneſs, the cure may be obſtructed, and other inconveniencies ariſe. Regimen.

§. IV. If the caſe is found ſimply a gonorrhœa, or a diſcharge like it, without any appearance of chancres, or other worſe ſymptoms, the means of cure in this ſtate, conſiſt principally, Firſt, in cleaning well the vagina, urethra, and foſſa magna, by lotions and injections; after which, it may be neceſſary to uſe ſome ſorts of unguents: and Secondly, in keeping the alvine tube ſufficiently open by ſome cooling and gentle aperient. Mr. Hunter, in his Treatiſe, Page 31, ſays, " We know that " moſt gonorrhœas are curable without mercury, and what is ſtill more, Cure.

" without any medical aſſiſtance; but what I believe is never the " caſe with a chancre." In Page 82, his ideas coincide exactly with what I have obſerved: He ſays, " When the diſeaſe is in the vagina " only, it is eaſily cured. Injections are the beſt means that can be " uſed, and after injecting, it may be proper to anoint the parts as far " up as poſſible, with mercurial ointment, and alſo to waſh the exter- " nal parts often with the injection. If the inflammation has attacked " the urethra, injections there cannot be ſo conveniently uſed, as it is " almoſt impoſſible the patient can throw an injection into that canal".

In the firſt edition, I adviſed the vagina and labia to be well waſhed with lotions, one made with Mel Ægyptiacum and Aq. Hordeat; and the other with Mercur. corroſiv. ſublimat. qr. viii. et Aq. Roſar. ℥viii I find the latter recommended by Mr. Hunter, as an injection in caſes of both ſexes; with this difference, that for men he adviſes one grain of mercury to eight ounces of the water, increaſing it gradually as the caſe may require. This rule muſt be alſo obſerved in women, and ſhould the proportion of the mercury adviſed by me cauſe much irritation or pain, a ſedative, ſuch as the following, may be attentively uſed. Boil, in two parts of water, four ounces of quickſilver, and about three ounces of white poppy ſeed, during the ſpace of about half an hour, and then ſtrain off for uſe. The ſame argent. viv. may be boiled often for the ſame uſe. After the vagina and other parts affected have been well cleanſed by thoſe lotions, it may ſometimes be neceſſary to anoint them with ung. cærul. mit. or any ſimple emollient, if that gives pain, which I believe will but ſeldom happen. By the uſe of theſe means, and keeping the alvine tube moderately open during two or three weeks, by ſome aperient in the form of pills or electuary, it may be expected, that the ſymptoms of a gonorrhœa will either be ſo much removed or alleviated, as to encourage the continuance of this treatment: If otherwiſe, a courſe of the mercurial plan muſt be commenced.

Moſt

Moſt writers on this diſeaſe have, I think, admitted the neceſſity of uſing mercury in the cure of it; but, as it appears to me, Mr. Hunter has beſt aſcertained when, and in what manner this excellent antidote is to be uſed. Not under diſguiſe, as done by impoſtors and the ignorant practitioners of this age, who vend, wholeſale and retail, their noſtrums (I had almoſt ſaid poiſons,) even by public authority, to the indelible diſgrace of it, but in the moſt ſimple and explicit terms; as for inſtance, whenever the virus ſhews its effects in form of chancres, buboes, or lues, he directs "the cure to be commenced with only one ſcru-
"ple, or half a dram of an ointment made of equal parts of quickſilver
"and hog's lard, rubbed in every night for four or ſix times, on ſome
"convenient part of the legs or thighs. If the mouth is not affected,
"the quantity may be gradually increaſed 'till two or three drams are
"rubbed in at each time; but if the firſt quantity has affected the
"mouth," he ſays, "we may be almoſt certain, that the glands of the
"mouth are very ſuſceptible of the mercurial ſtimulus; therefore it will
"be proper to wait two or three days till that effect begins to go off; and
"then, to begin again, gradually encreaſing the quantity about one
"ſcruple every time, till two drams or more are rubbed in every night;
"care being taken not to affect the mouth ſo much as to bring on a
"ſpitting." In Page 346, he ſays, "To cure the diſeaſe, whether in
"the form of chancre, bubo, or lues venerea, probably the ſame quan-
"tity of mercury is neceſſary; for one ſore requires as much mercury
"as fifty ſores in the ſame perſon; and a ſmall ſore as much as a large
"one; the only difference, if there is any, firſt depends upon the nature
"of the part affected, whether naturally active, or naturally indolent."
It appears from what he ſays in other parts of his treatiſe, that about three or four ounces of this ointment will moſtly be found ſufficient for the cure; but, after the ſymptoms have all diſappeared, it's uſe ſhould be continued about fourteen days longer, to prevent any return of them.

In

In caſe of buboes, he adviſes the mercury to be applied to thoſe ſurfaces by an abſorption, from which it may paſs through the diſeaſed gland; for, by deſtroying the diſeaſe there, the conſtitution has leſs chance of being contamined. In the cure of buboes, the mercury ſhould always be made to paſs into the conſtitution, near as poſſible by the ſame way through which the habit received the poiſon, that is, by the ſame lymphatic veſſels. If the bubo be in the groin, apply the unguent on the thigh, &c. When two buboes happen, he obſerves that they are more likely to ſuppurate than where there is only one. Should the patient, or any circumſtance forbid wholly the uſe of unction, he in ſuch caſes prefers mercurius calcinatus to any of the other preparations; and directs one grain of it, made into a pill with any medicine, which the ſtomach and bowels may require, every night for a week; after which time, ſhould the mouth not be affected, it may be repeated evening and morning; increaſing even to two grains if no ſpitting enſues. The ſame directions, he ſays, hold equally good, either with mercurius fuſcus, or colomel; but it requires more of theſe laſt preparations of mercury to have the ſame medicinal effect upon this diſeaſe, than the beforementioned; perhaps the proportion of their effects, are about two or three to one: That is, three grains of theſe preparations appear only equal to one of the mercurius calcinatus. The crude mercury given in the ſame quantities with either of the former appears the moſt efficacious of all, for fifteen grains of crude mercury rubbed down with any muſcilage, ſeems only equal to one or two of the mercurius calcinatus.

Mr. Bell, in his treatiſe, recommends the quickſilver pill of the Edinburgh pharmacopeia, in preference to all other preparations of mercury. He adviſes five grains of this pill to be taken every night and morning; gradually increaſing the doſe till the mouth becomes affected, upon which, it muſt be left off; and, the body, if not ſufficiently lax, opened with ſome gentle aperient; after which the pill

may

be taken again and continued as occaſion is required, taking care not to bring on a ſpitting.

In the external treatment of chancres, Mr. Hunter adviſes them to be reduced into the ſtate of common ſores, either by inciſion or cauſtic. The cauſtic to be uſed ſhould be pointed at the end like a pencil, that it may only touch thoſe parts that are really diſeaſed; this treatment ſhould be continued till the ſurface of the ſore looks red and healthy; after having thrown off the laſt ſloughs. When it has arrived at this ſtate, it will be found to heal like any other ſore produced from a cauſtic.—He ſays, I have diſſected a chancre out, and the ſore has healed up without any other treatment but common dreſſings. Nevertheleſs, as it cannot be certain whether an abſorption from the chancre has not taken place, he thinks it is prudent, not only to dreſs the ſore with mercurial ointment, but to throw mercury into the blood alſo, as above directed, for the ſecurity of the patient. He ſays, I have often uſed mercury rubbed down with ſome conſerve in the room of an ointment, and it has anſwered extremely well; calomel uſed in the ſame way, and alſo the other preparations of mercury mixed with muſcilage, or with honey, anſwers the ſame purpoſe. He thinks the oftener the dreſſings are ſhifted the better, as the matter from the ſore ſeparates the application from the diſeaſed parts, by which means the effects are loſt or diminiſhed. When buboes are inclined to ſuppurate, mercury may be uſed in a leſſer quantity, than when they appear to be reſolved; and when well ripened, the ſkin being thin they may be opened by the lancet, &c. and dreſſed with any common digeſtive.

Mr. Bell ſays, "that if the bubo does not burſt of itſelf, it muſt be "opened by the lancet, extending the inciſion about one half or two "thirds of its length from the lower part, upwards. The excreſcences "called warts, are generally cured by the ſciſſars, a hyature, or by cauſtics, "ſuch as the lunar, lapis ſepticus, blue vitriol, &c." If the child is born alive, its cure muſt depend on that of the mother, whilſt it ſucks.

## CHAP. VIII.

## OF ABORTIONS BEFORE THE END OF THE THIRD MONTH.

Definition. ABortion is a premature ſeparation and excluſion of the ovum from the uterus, which may happen at any time of pregnancy; but in this chapter, we ſhall treat of that which enſues before the completion of the third month.

Cauſes. Various are the cauſes from whence it may be ſuppoſed to ariſe, as for inſtance, firſt, when the uterus is not diſpoſed to the right forming of the membrana caduca; ſecondly, when this membrane, being formed, ſheds or ſeparates of itſelf prematurely from the uterus; thirdly, when the veſſels of the uterus are not pervious enough for the neceſſary circulation of fluids during the pregnant ſtate; fourthly, when the ovum has not a ſufficiency of villi upon the chorion to inoſculate duly with thoſe of the inner ſurface of the uterus, and to aſſiſt in the formation of the placenta, &c. fifthly, when the mother has been weakened ſo much by a diſeaſe, as not to be able to ſupply the ovum duly with proper nouriſhment; and ſixthly, when the embryo or fœtus dies.

Abortions proceed alſo when no fault appears to be either in the uterus or ovum, from ſuch as the following cauſes; firſt, violent commotions of the animal ſpirits, namely, joy, anger, grief, frights, &c. ſecondly, violent exerciſe or ſtretchings of the body, jolts in a coach, falls, &c. thirdly, an over fullneſs of the blood veſſels, whereby the ovum may be waſhed from the uterus, at the periodical impulſes of the catamenia, or a too great action or contraction of the veſſels, as in the ſmall-pox, inflammatory diſeaſes, &c. and fourthly, when layers of congealed blood have accumulated between the caduca

and

and chorion, ſo as to obſtruct the due increaſe of the placenta, and the circulation between the embryo and the uterus. This frequently happens in the firſt months, as muſt be evident to every one who examines the ova which are then expelled.

§. II. The ſigns of abortion are uſually a weight, and pain about the loins and pelvis; a flux of blood from the uterus, which in ſome continues moderate for ſeveral days, and then on a ſudden encreaſing, attended with ſickneſs at the ſtomach, and forcing pains, an exit of the ovum enſues. Diagnoſtics.

In others, the hæmorrhage begins with an immediate guſh of blood, wetting many cloths in a few hours; during which time, the coagulable lymph collects in the vagina; ſometimes a little of it in the os uteri, in which places it uſually forms large and denſe clots, which, helping ſomewhat to reſiſt the contraction of the parts, ſtimulates them, and conſequently excites the pains: the uterus now endeavours to expel its contents; a freſh flux is forced from its cavity, whereby the accumulated clots are waſhed forwards, and partly evacuated; upon this, there is commonly reſpite for awhile, and the appearance of the hæmorrhage is often ſo much leſſened, as to make thoſe that attend conclude the affair is ended. But the coagulations form again, the pains recur, a freſh flux enſues; and thus ſhe goes on, till her ſtrength is reduced, and faintneſs follows. By this time, it is not unuſual for the ovum to be arrived in the os uteri; and ſoon afterwards to be hence excluded, if the pains are forcing.

§. III. Women that are young and healthy will ſuſtain an amazing loſs of blood, and yet recover a tolerable ſtate of health in a few weeks. But thoſe who are not ſo, or who are very corpulent, become liable to faintings; and by the loſs of blood, are often ſubjected to hyſterical diſorders, leucophlegmaticæ, and ſometimes dropſies. Although Prognoſtics.

though experience proves, that when a flooding comes on, the abortion can but very rarely be prevented, ſcarcely ever, if attended with pain. It nevertheleſs teaches, that the hæmorrhage may be reſtrained, and moſt of the evils, which otherwiſe might happen, prevented, when means are timely and properly uſed. And moreover, that ſuch means as are proper to prevent the miſcarriage, are alſo proper to ſave the ſtrength; and conſequently, the health of the woman; as for example, theſe following:

Regimen. §. IV. Quietneſs and coolneſs muſt be ſtrictly obſerved; ſhe may be allowed eatables which are nouriſhing, and not heating, as bread, boiled lamb, mutton, chicken, or fiſh of the flat kinds, namely, turbot, brill, flounders, &c. But as to drinkables, none are to be permitted that will accelerate the circulation. Broths of mutton, beef, chicken, or eels, may be uſed in ſmall quantities, and often, but never ſo warm as to occaſion fluſhings.

If the flooding is moderate, ſmall beer, or water with wine may be allowed at dinner and ſupper. But if it is violent, the drink may conſiſt chiefly of orangeade or lemonade, a little Florence wine or claret being added to them occaſionally; oxecrate likewiſe may be drank with advantage.

Cure. §. V. When abortion is portended, the patient ſhould be enjoined to lie in bed, or continue in an horizontal poſition, and be bled according to the ſtate of the caſe; that is to ſay, if a flooding has not yet appeared, or if it has, and is yet only moderate, the ſtrength being tolerably good, eight ounces may be taken from the arm by a large orifice: but if it is violent, four or ſix ounces only will be ſufficient now, though it may be repeated once if the pulſe is full, as ſometimes happens in habits which are very plethoric. Veneſection performed in this manner generally diminiſhes the hæmorrhage at leaſt;

leaſt; and ſometimes, although rarely, puts a ſtop to it. She may next take, as ſoon as poſſible, ſome ſtyptic medicine, ſuch as tinct. ſtypti helvetii.—Roſarum, coral. rubri. decoct peruv, &c. Tinct. Thebaica being added as occaſion requires.

If theſe means are ſpeedily uſed, the hæmorrhage being moderate, and the os uteri ſcarcely opened, there is ſtill a poſſibility of preventing a miſcarriage; therefore, ſhe may perſiſt in the ſame plan.

§. VI. When the practitioner is called in late; as for inſtance, a day or two after the attack, and finds that the flooding has been very copious, and that the os uteri is conſiderably opened, he may then ſuppoſe that the ovum is already detached from the inner ſurface of the uterus, and will therefore be expelled. Nevertheleſs, if the patient is not greatly weakened by the hæmorrhage, he may venture to take a few ounces of blood from the arm, by a large orifice; which will, probably, have the effect as above obſerved; namely, that the flooding will become leſs violent, &c. But whether this be done or not, the dietetic and medical plan, as above directed, muſt ſtill be obſerved.

§. VII. When the flooding becomes violent, attended with grinding or forcing pains, the os uteri being dilated ſo much as to admit the ends of two or three fingers, he may then be aſſured that the expulſion is not far off; therefore, to ſupport her ſtrength till this happens, ſhe muſt be duly ſupplied with drink and diet as above directed; and to ſave her as much as he can from the flooding and its conſequences, he may preſcribe cort. peruv. to be uſed in any form; or, coral. rubr.—Tinct. Roſar.—ſtypt. helvet, &c. adding fifteen drops of tinct. thebaic. to one doſe of either of them twice a day, or as occaſion requires if the flooding be violent.

§. VIII. When the hæmorrhage abates, and changes to a darkiſh colour, as not unuſually happens about this time, eſpecially if the above means have been uſed; the diſcharge growing paler, and gradually leſſening for the ſpace of ſix or eight hours, he may then venture to conclude that the flooding will not return again with any violence, unleſs at the time of the expulſion.

Regard being had to the regimen recommended, and to the uſe of thoſe medicines, the woman's ſtrength is generally ſo well maintained, that ſhe will recover health, although it is very commonly about a week before the ovum is expelled. It is neceſſary to obſerve, that when the flooding has abated and changed colour, if the patient, is coſtive, ſhe muſt be relieved, and afterwards kept open by gentle laxatives, even during the uſe of the above means. Manual aid, at this time of pregnancy, is but very ſeldom required, and as rarely of benefit.

§. IX. The ova, which are expelled during theſe months, are uſually of the following ſizes, namely, in about ſix weeks after conception, that of a pigeon's egg; in eight or nine weeks that of a hen; and at the end of the third month, not larger than that of a gooſe.

When abortion has happened, the liquid and ſoft diet will be moſt ſuitable for ſome days; as for inſtance, caudle, and broths of different kinds, which do not ſtimulate during their digeſtion, and are eaſily converted into blood.

The medicines required, are thoſe which are ſoft and cordial, as ſpermaceti and cenfectio cardiaca, &c. to which may be added the peruvian infuſion laſt preſcribed, in caſe the patient's conſtitution is greatly debilitated.

CHAP.

## CHAP. IX.

### OF ABORTIONS FROM THE THIRD TO THE END OF THE SIXTH MONTH.

ABortions may proceed, at any time of uterine geſtation, from moſt of the cauſes which have been enumerated in the foregoing chapter, ſo that it would be needleſs to repeat them here. As to the diagnoſtics and prognoſtics, they differ chiefly in this, that the farther a woman advances in her pregnancy, the more ſhe is generally expoſed to danger, if ſhe miſcarries. For as the veſſels of the uterus become more enlarged, a greater quantity of blood, in a given time, will flow from their orifices, in proportion as the ſecundines are looſened. I ſay generally, for there are inſtances (not a few) where women flood leſs in the latter months, than they commonly do in the former: nay, ſome flood not at all; but then it is to be obſerved, that thoſe are caſes wherein the child appears to have died in the womb, (uſually ſome time) antecedent to the expulſive endeavours; very propably, in ſome caſes, before the ſecundines even begin to be detached from the uterus.

§. II. With regard to the regimen, the ſame muſt be obſerved as was recommended in the preceding chapter. Cure.

When the flooding comes on gently, the pains being not urgent, and the patient not extremely weak, ſome blood may be taken from the arm by a large orifice at the firſt onſet; or even a day or two afterwards, if the ſymptoms are ſlight, and the os uteri remains ſhut. But if the orifice is opened, the flooding conſiderable, and the pains increaſing, the operator muſt be cautious.

Indeed, if the patient is ſtrong and plethoric, the pulſe full and hurried, a few ounces being taken from the arm by a large orifice will ſometimes help to reſtrain the hæmorrhage. But this caſe ſeldom happens; for the flooding has generally ſunk the pulſe before the operator is called; and therefore, the taking away of more blood, would be injudicious, if not dangerous.

With reſpect to medicines, the ſame method muſt be obſerved here, as was recommended in the preceding chapter, taking care to alter or add to it according to the exigency of the caſe.

This being obſerved, if the flooding is moderate, the natural efforts of the mother are generally ſufficient to compleat the work. Nay, whatever part of the fœtus preſents, it matters not; for before the end of the ſixth month, it will be forced along the pelvis in any poſition; and ſometimes come forth with very little difficulty.

§. III. When the os uteri is dilated, and the ovum happens to ſtick in it, the woman being faint with the loſs of blood, the operator may paſs the point of his finger as far beyond the ovum as he can; and gently endeavour to looſen and help it forwards, by curving the finger round it to ſcoop it out, whilſt pains aſſiſt. But in doing this, he muſt take care not to burſt the membranes if it poſſibly can be avoided. Should they, indeed, happen to be broken, and the fœtus to ſtick, or lie tranſverſely in the orifice, he may endeavour to facilitate the birth by bringing down thoſe parts, which, lying in the way, obſtruct it moſt.

The orifice and neck of the womb, at this time, are for the moſt part thick, and open with difficulty, eſpecially if it be the firſt or ſecond pregnancy: therefore, he muſt be cautious, and not attempt to dilate; but, waiting for the aſſiſtance of pains, now and then paſs a finger between the fœtus and orifice; and as the orifice opens by the conatus naturales, he may then paſs another; and if it is towards the

the ſixth month, perhaps there may be room for a third; which being done, he muſt get as far as he can beyond the fœtus, and bring it along through the orifice.

But he muſt not attempt to inſinuate the whole hand, for even at the end of the ſixth month, there is ſeldom room in the uterus to admit of it with ſafety; and he muſt alſo take care that the fœtus does not ſeparate, eſpecially at the neck, if the head comes laſt; for as it is commonly dead, it is ſometimes ſo rotten that its parts will divide by applying but a very ſlender force, whereby the head will be in danger of being left behind; and if it is, the os uteri will ſoon contract before it. A difficulty of this kind once occurred to me; to obviate which, I paſſed two fingers within the orifice; turned the baſis of the ſkull towards it; preſſed together the parietal bones with the tops of my fingers, which being curved, kept this flattened part of the head cloſe to the inſide of the cervix, and that of the os uteri; and the baſis being now the loweſt, and the thickeſt part, I kept it down; and whilſt the woman aſſiſted with her pains, I ſlid it towards me before the points of my fingers till it came entirely through the orifice.

§. IV. When the fœtus has come forth, it is ſometimes very difficult to get away the placenta, for the os uteri being very thick, contracts ſuddenly and ſhuts it in.

In this caſe, he may paſs two or three fingers (with their ends a little curved) as far into the cavity as he can, and, by degrees, endeavour to bring the placenta forwards, whilſt the woman forces down, and aſſiſts him with her pains. As he detaches ſome of it from the uterus (in caſe it adheres) and brings it towards the orifice, more of it will come within his reach, ſo that in proceſs of time, the uterus will contract ſo much above, that the fundus will deſcend cloſe to the ends of his fingers, and then the ſecundines may ſoon be extracted without much difficulty. In doing this he muſt not hurry, but wait,

and

and keep his fingers within the orifice, which will prevent its contraction, and help alſo to excite the pains, which at this time are very helpful. He muſt alſo be careful neither to hurt the inner ſurface of the uterus, nor lacerate the placenta; for, by keeping the latter whole, it will come forth more eaſily than a part would do, if left behind.

Beſides, if it adheres ſo much that he cannot bring it away with ſafety now, he muſt leave it to nature, by whoſe help it will generally be expelled, though ſometimes not till a week or more after the excluſion of the fœtus. Nevertheleſs, if it can be brought with ſafety at firſt, it is always beſt; for if either the whole or part of it is left, a putrid fever, attended with ſymptoms which are often troubleſome, and ſometimes dangerous, will probably enſue.

When either the placenta or a part of it is left in the uterus, and cannot be extracted ſafely as above directed, the conatus uterini are chiefly to be relied upon. I ſay chiefly, for although there are medicines which are recommended as eminagogues, eſpecially pulvis ad partum, pulvis e myrrha compoſitus, caſtor, ſal ſuccini, and extractum ſabinæ, &c. yet I doubt their efficacy very much. Nevertheleſs, I will not deny but they may be joined in proper doſes, with ſuch anticeptics and corroboratives as preſcribed in the preceding chapter, eſpecially preſcription III. In order to prevent putrefaction, as well as to ſupport the patient, an aceſcent and nutritive kind of diet is alſo required; for whilſt any part of the ſecundines (which now may be conſidered as an extraneous ſubſtance) remains in the uterus, it commonly becomes ſo highly putrid, as to excite a fever of that nature, attended with an extremely fœtid, and ſometimes very copious diſcharge; whereby the woman is reduced to the greateſt danger.

Uterine injections are therefore neceſſary, and may be uſed with advantage; for which reaſon, I ſhall ſubjoin the following caſe:

A woman

A woman in the fifth month of her firſt pregnancy, being ſeized with a flooding, had an expulſion of the fœtus on the nineteenth of November, 1765. The funis being detached by accident, and ſeveral hours having paſſed without any ſigns of the placenta's approaching, my aſſiſtance was deſired. It appearing, upon enquiry, that ſhe was only about eighteen weeks advanced in her reckoning; the vagina, and os uteri alſo, being ſo much contracted as to render any manual endeavours highly improper, my thoughts were therefore turned upon the uſe of diet and medicine, the help of nature, and the effects of time. The caſe proved as follows:

A pretty copious diſcharge of blood proceeded from the uterus for ſeveral days, then changed to a ſerous conſiſtence, of a dark colour, and moſt fœtid ſmell; the pulſe grew quick and low, but not very ſmall; ſhe had a pain in the hind part of her head, which ſoon grew ſo violent, that ſhe could not endure its being raiſed from the pillow. This ſymptom might, in ſome meaſure, ariſe from the loſs of blood. She ſlept but little, was ſometimes delirious, had fœtid ſweats, and was thirſty. About a week being elapſed, the ſecundines were to be felt at the inſide of the os uteri; but now the diſcharge was ſo extremely fœtid, and the putrid ſteams from the uterus ſo very powerful as ſcarcely to be born: nay, the woman had frequent faintings, which ſeemed to be occaſioned chiefly by thoſe noxious vapours; ſhe had an oppreſſion on her breaſt, and ſometimes her ſpeech faultered. I now began to inject the uterus with aqua hordeata, mixtura oleoſa cum gummis being ſometimes added; after which, the diſcharge grew rather leſs, and not ſo fœtid; the ſweats were not ſo diſagreeable, nor was the oppreſſion on the præcordia ſo great. Her ſtrength, and voice alſo, grew ſomething better; but ſhe had ſtill a head-ach; reſtleſs nights; and ſhe was ſometimes faint.

In a few days, a part of the ſecundines having deſcended through the os tincæ, I endeavoured to extract them, in order to relieve the

woman.

woman as ſoon as I could, from what ſeemed to me an extremity of danger; but they proved ſo very tender as to ſeparate. Therefore, the remainder being left in the uterus, I was obliged to reſume the injection, with the dietetick and medical means, which ſhall be mentioned hereafter, and wait again for the effects of time.

The diſcharge was ſomewhat leſſened, after this fragment was extracted, and the ſmell was not quite ſo fœtid. Nevertheleſs ſhe had a frequent pulſe; there was an oppreſſion about the breaſt; the head was ſometimes a little hurried, and the face looked very pale and ſickly. In this manner ſhe went on about ten days longer, when the ſenſation of a bearing down came on, attended with ſlight pains, by which the remaining part of the ſecundines was expelled from the cavity of the uterus, into that of the vagina. I endeavoured now to extract it from the latter, by paſſing a finger beyond it as far as I could; but it ſlipt round, and evaded me ſo much, that I could not bring it through the external orifice. I therefore perſiſted in waſhing it with the ſyringe, in order to prevent the putrefaction as much as poſſible, and to forward the expulſion.

The woman began now to recover health; the fever and head-ach abated; ſhe had a deſire for aliment; and ſometimes was able to get out of the bed, and to ſit up an hour or two in the day. Theſe ſymptoms giving hopes, from day to day, that nature would be able to compleat the work, I went on till five weeks were nearly expired ſince the excluſion of the fœtus; and then, being extremely impatient to have the woman freed from this diſagreeable companion, whoſe vapours were ſtill offenſive, even at a conſiderable diſtance from her, I paſſed the fore-finger of my left hand through the os vaginæ, and placed its point againſt the putrid body; then, having paſſed a pair of ſmall forceps (about the length and thickneſs of thoſe repreſented in Plate IX. Fig. I.) along this finger, I laid hold of that part of the placenta which correſponded with the os vaginæ, and brought it gradually

gradually forwards. This hold and ſeveral others giving way, I carefully renewed them, keeping my finger ſtill as a director, whereby I avoided any hurt to the woman; and in a few minutes the remaining part of the ſecundines came entirely forth. This being done, I waſhed the cavities of the uterus and vagina with an injection of aqua hordeata and mel-roſarum. The fœtid vapours now vaniſhed, and every ſymptom with them; the woman recovered health with amazing ſpeed; has had a child ſince; and continues perfectly well.

This portion of the ſecundines, which had lodged ſo long in the vagina, was larger than a ſwan's egg, and was reduced (ſomewhat) to a conical form, by that of the vagina.

During this illneſs, the room was kept in a very moderate degree of heat, and freſh air admitted daily into it. The floor was ſprinkled with vinegar, and the ſteams of it (made hot) were ſmelled to and inſpired by the patient; and her cloaths were often changed, and kept as clean as circumſtances would permit. At firſt, whilſt the flux was red, her drink was chiefly the following:

℞ Aceti vini albi unciam unam,
Aquæ puræ libram unam,
Sacchari puriſſimi quantum
ſatis ad gratum ſaporem.

White caudle and chicken broth (given cool) and puddings were alſo permitted: but when the uterine hæmorrhage became pale and leſs in quantity, the caudle and broth were warmed and uſed more freely. Orangeade was ſometimes given alſo; and as a farther change, the following jelly was allowed, which agreed with her extremely well.

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℞ Raſuræ cornu cervini,
Hordei perlati,
ſingulorum uncias duas,
Aquæ puræ libras quatuor,
coque ad dimidiam dein colaturæ adde,
Vini rhenani uncias quatuor,
Succi aurantiorum drachmas ſex,
Sacchari puriſſimi ſeſcunciam;
Miſceantur, et bibat ægra uncias quatuor calidè ad libitum.

And upon the return of her appetite, chicken and fiſh, &c. with a glaſs of wine afterwards, were allowed. The medicines which ſhe took were preparations of the cortex peruvianus, coralium rubrum, confectio cardiaca, caſtor, extractum ſabinæ, ſpiritus mindereri, nitri dulcis, lavendulæ compoſitus, oxymel ſimplex, and ſyrupus croci, &c.

And the inteſtinal tube, being firſt relieved by a glyſter, was kept open with a ſcruple of rhubarb, repeated as occaſion required.

CHAP.

## CHAP. X.

### OF ABORTIONS FROM THE SIXTH TO THE END OF THE NINTH MONTH.

IT has been obſerved in the preceding chapter, that the farther a woman is advanced in her pregnancy, the more ſhe is endangered by the flooding which generally attends an abortion; and ſo ſhe is. Nevertheleſs, the ſkilful man-midwife needs not be told, that through the whole of his practice, he will but rarely meet a trial which can prove a truer criterion of his ſkill and dexterity, than that of conducting his patient ſafely through a caſe of this kind, when happening between the ſixth and ſeventh month. For even now, the cavity of the uterus is commonly ſo ſmall, and its orifice ſo very thick, and ſometimes rigid, as but ſeldom to admit the hand with ſuch facility and quickneſs, as ſometimes the emergency of the caſe requires. Therefore, if he underſtands not the animal œconomy ſo well, as to judge rightly how long it will ſuſtain the degree of the flooding; and how far he can rely upon the efficacy of medicines; and, theſe failing, when and in what manner he muſt attempt to aſſiſt by the hand; he may ſoon either endanger his patient by temerity, or loſe her by timidity.

§. II. To avoid theſe evils, and conſequently execute his office well, he muſt uſe every proper method to reſtrain the hæmorrhage, and maintain the ſtrength of the patient till the natural efforts (called pains) come on, which happening, will ſometimes compleat the delivery. To this end, the medicinal plan, recommended in the two preceding chapters, may with propriety (it is preſumed) be obſerved

here; during the uſe of which, he muſt ſtrictly attend to the ſtate of the pulſe, and degree of the flooding. For when the pulſe ſinks, the flooding continuing copious at the ſame time, or encreaſing ſuddenly to ſuch a quantity, as to convince him that death muſt enſue, unleſs it be prevented by an immediate delivery; he muſt then attempt the manual operation, viz. paſſing his hand, with due caution and tenderneſs, into the cavity of the uterus, and extracting its whole contents in the manner as ſhall be directed in Part III. Chap. V.

Although he may not always be ſo ſucceſsful by this method, as to ſave the patient; yet, as he may have done his office as well as poſſible, he is not to be diſcouraged. For as in other caſes, ſo in this, it is always better to try a doubtful remedy, than to leave the patient to certain deſtruction. Beſides, as the remedy here propoſed (though not infallible) is generally ſucceſsful, he is therefore juſtifiable in the uſe of it, be the event as it may. In ſhort, whatever cenſure may be thrown upon him by the ignorant, he muſt not regard it; becauſe, according to the teſtimony of the moſt ſkilful in the obſtetrick art; and, indeed, acccording to long experience, there is no other way to ſave the woman. Dr. Aſtruc (ſee his hiſtory of the art of midwifery, page 35.) informs us, that we are obliged to a woman for this diſcovery; as it was firſt hinted (in 1609.) by one Louiſa Bourgeois or Bourſier, midwife to Mary of Medicis, queen to king Henry the fourth of France; ſince whoſe time, it has gradually prevailed in practice, though not ſo univerſally as could be wiſhed, even amongſt thoſe who may be ſuppoſed to know it.

§ III. When (in the month mentioned, §. I. or at any time from that, to the end of uterine geſtation) a ſmall portion only of the placenta is ſeparated from the inner ſurface of the uterus, it often happens that the flooding proves very ſlow, conſequently very moderate,

derate, eſpecially if the child has been dead for one, two, or more days; the mother's ſtrength remains good, the pains come on, the child preſents for the birth, the orifices open, and the delivery enſues in the natural way. It is obſervable, in ſome of theſe caſes, that the hæmorrhage comes on pretty plentifully at firſt, and ſome clots are diſcharged. But as the pains increaſe, the orifices open, the child advances, and the flux abates ſo much, that by the time the head has deſcended pretty low in the pelvis, the red diſcharge is entirely gone off.

Nevertheleſs, the operator muſt ſtill be on his guard, and attend to the ſtate of the pulſe. If it ſtands good, or rather riſes (which ſometimes happens) he may then be convinced, that nature is miſtreſs of the taſk: but if the pulſe ſinks, and the patient grows faint, he may then ſuſpect that ſhe bleeds within; that is, in the cavity of the uterus. To be certain of which, he muſt raiſe the head a little in the pelvis with one finger, or more if that is inſufficient, whereby room will be made for the blood to eſcape, in caſe any has been lodged. This being done, if nothing be diſcharged but liquor amnii, or a little blood mixed with it; all is well, he may reſt eaſy, only taking care to ſupport the patient with cordial diet and medicines, and to wait the event of the natural efforts.

But if ſhe is found to have bled inwardly, which will be known by the emiſſion of clots, or of freſh blood, upon the head's being raiſed in the pelvis; there is then no time to be loſt; the head muſt be farther raiſed, the hand paſſed into the cavity of the uterus, and the operation performed without delay.

§. IV. When a conſiderable part, or the whole of the placenta is detached from the uterus, the blood pours faſt away; yet it ſometimes happens, in this extremity of danger, that the woman has no pains; and the os uteri remains thick, and not ſo open as to admit

two

two or three fingers to paſs with eaſe; by which circumſtances, a young practitioner may happen to be deterred, and thereby not give that immediate aſſiſtance which is required; from which neglect, the patient may ſink, and preſently die.

I muſt therefore recommend it to him again in ſuch caſes (provided he underſtands them clearly) not to be afraid; but as ſoon as he has prudently acquainted the relations of the danger, and forwarned them how uncertain the event may prove, although the beſt endeavours may be uſed, if the caſe ſtands as here deſcribed, he muſt proceed to deliver (as already obſerved) in ſuch manner as will be deſcribed in the next part of this work.

But previous to it, if his ſituation be ſuch that he can immediately have an experienced man-midwife to conſult with, he will certainly do prudently in taking his opinion in every caſe of this kind, till practice has made him more perfect in the art. If he has no ſuch opportunity, he muſt then act according to the beſt of his judgment. See more of this matter Part III. Chap. V. §. X.

A NEW

A NEW

# SYSTEM OF MIDWIFERY.

## PART III.

### OF BIRTHS, AND THE ASSISTANCE WHICH IS NECESSARY IN EVERY KIND OF THEM.

### INTRODUCTION.

HAVING, in the two preceding parts of this work, endeavoured to throw as much light as we could upon the ſubject of generation, and on the method of preſerving the mother's health during the ſtate of pregnancy, we ſhall next conſider parturition, or the act of bringing forth: which act or operation, though reſulting from the eſtabliſhed laws of nature, is nevertheleſs at times, by ſundry cauſes or incidents, rendered ſo extremely difficult, and ſometimes dangerous, as proves the aſſiſtance not only of the obſtetrick art merely, but of the other parts of medical knowlege alſo, to be abſolutely neceſſary.

ceſſary. By this hint, I would not have it underſtood that I think births are commonly perilous, and that men only are to be employed in midwifery; no; happy it is that by far the greateſt number of births are chiefly performed by nature (I may ſay almoſt) alone. Women, therefore, in thoſe which are the moſt eaſy and natural, may do the office as well as men; and, I think, ſhould ſtill be employed, whilſt they are ſo honeſt as to give notice when difficulty or danger appears, that a man-midwife may be called before it is too late. With reſpect to this point, I have the pleaſure to ſay, that it is ſtrictly obſerved by moſt of thoſe midwives I know: but to return; what I mean is this, that as caſes in midwifery happen often, where the life of the mother, as well as of the child, depends ſo immediately upon the conduct of the operator, as in a few minutes to be either ſaved or loſt, men ſhould not take upon them the practice until they have been duly inſtructed in every part of the art. And now, that midwifery is ſo well taught in London, there can, indeed, in my humble opinion, be no kind of excuſe for attempting the practice of it prematurely.

Though there are ſeveral branches, into which the medical ſcience may be divided, and though ſome of them claim a ſuperiority over the reſt, yet they are all ſo cloſely connected, that, in my opinion, he who is not well acquainted with all of them, can ſcarce excel in any. If, indeed, the phyſician practiſes in London, or in ſome other great metropolis, he may be aſſiſted by conſulting with thoſe who are the moſt perfect in their reſpective branches. But, on the contrary, when his ſituation, or the circumſtances of his patient will not allow of this; what difficulties muſt he meet with! And through what dangers muſt his patient run! I am afraid not a few: and for this reaſon I think ſtudents do well (whatever branch their favourite object may be) to extend their knowledge as univerſally as they can.

I ſhall

I ſhall inform the reader, that, in order to aſſiſt the ſtudent in the theory of midwifery, and refreſh his memory, when he comes to the practice of it, I have thought it neceſſary to give a general anatomical deſcription of the parts, &c. without entering into the minutiæ, which, in a work of this kind, are certainly unneceſſary.

Some will blame me, perhaps, for quoting but few authors; in regard to this, I ſhall only ſay, that whatever practice I recommend, is ſuch, as from experience, I have reaſon to think the ſafeſt and beſt; and therefore I thought a pompous diſplay of authorities altogether needleſs.

It will not, I hope, however, be deemed improper to give a ſhort hiſtorical view of the progreſs of the art; this, though unneceſſary with regard to the learned, may be both uſeful and agreeable to the ſtudent.

§. II. I ſhall begin, therefore, with the celebrated Hippocrates, who, no doubt, had all the information concerning midwifery that could be obtained, either by the ancient records, or the beſt practitioners in his time; yet, from what he ſays, it appears that this art was ſtill in its infancy; for, if I do not miſunderſtand him, the ſum of what he directs, in regard to the operative part, is principally as follows: Hippocrates.

When the child preſents fair (that is, with the head foremoſt) and cannot be eaſily delivered, ſternutatories are to be uſed; the patient is to ſtop her mouth and noſe, that they may thereby be rendered more efficacious; and ſhe is alſo to be ſhaken, and placed in different poſitions: the pudenda and orifices muſt be anointed with emollients, and cautiouſly dilated; and the ſecundines extracted by degrees, together with the child.

If the child lies acroſs, preſenting to the os uteri, whether it be alive or dead, it muſt be puſhed back, and turned ſo that the head

may preſent according to nature (that is, the foremoſt) and ſoon afterwards, he ſays, but if the leg, or arm, or both, of a living child preſent, they muſt, as ſoon as diſcovered, be returned into the womb, and the child brought into the paſſage with its head downwards; or if it preſent with the ſide or hip, the ſame method muſt be uſed. In the ſame manner is the child to be managed when dead, unleſs its body is ſo much ſwoln as to prevent the delivery; in which caſe, he directs to extract it piece-meal, in the following manner:

If the head preſents, let it be opened with a ſmall knife, and the bones of the ſcull being broken, muſt be extracted with a pair of forceps, for fear of hurting the woman; or by an embryulcus, firmly fixed on the clavicles, it may be extracted by little and little. After the head is delivered in this manner, ſhould the child ſtick at the ſhoulders, he directs to divide the arms at the articulations; and they being brought away, the reſt of the body generally follows with eaſe; but if it will not give way, the whole breaſt muſt be divided, and great care taken that no part of the inteſtines be denudated or wounded, leſt the guts or their contents falling out, ſhould retard the operation; then the ribs being broken, and the ſcapulæ extracted, the reſt of the fœtus will eaſily follow, unleſs the abdomen is ſwoln; in which caſe, the belly muſt be punctured, and, on the exit of the flatus, the child will be brought along. If part of the child is already delivered, and the reſt will not follow, nor can that which is out be returned, he orders the operator to take away as much as he can of it, and puſhing up the remainder, turn the head downwards: but, previous to this operation, he adviſes him to pare his nails, and uſe a crooked knife, the point and back of which, muſt be covered with the fore finger, at its introduction, leſt it ſhould hurt the uterus.

When the head is left behind the body, he directs it to be extracted with the operator's hand. And when the child remains dead in the uterus, and cannot be delivered either by the force of nature or medi-

cines

cines, he directs us to introduce the hand, anointed with ſome unguent, and, dividing the parts with an unguis fixed on the great finger, bring the fœtus along as before.

With reſpect to the ſecundines, he ſays, if they come not immediately after the birth, the woman labours under a pain in her belly and ſide, attended with rigors, and a fever, which vaniſh when they are diſcharged; though, for the moſt part, the after-birth putrifies and comes away about the ſixth or ſeventh day, and ſometimes later. In this caſe, he orders the patient to hold her breath, and preſcribes internally, mugwort, dittany, flowers of white violets, leaves of agnus caſtus, with garlick, boiled or roaſted, ſmall onions, caſtor, ſpikenard, rue, and black wine.

And in another place, after having deſcribed the methods of delivering a dead child, he ſays, if the ſecundines come not away eaſily, the child muſt be left hanging to them, and the woman ſeated on a high ſtool, that the fœtus by its weight may pull them along; and leſt this ſhould be too ſuddenly effected, the child may be laid on wool newly plucked, or two bladders filled with water, and covered with wool, which being pricked, as the water evacuates they will ſubſide, and the child ſinking gradually, will gently draw the ſecundines away; but ſhould the navel ſtring happen to be broke, proper weight muſt be tied to it, in order to anſwer the ſame purpoſe; theſe being the eaſieſt, and leaſt hurtful methods of extracting the placenta.

Whoever is deſirous to ſee more of what he ſays concerning this matter, may conſult Fœſiuſe's tranſlation of his works, particularly de morbis mulierum, lib. i. et de ſuperfœtatione.

From the time of Hippocrates to that of Celſus, there is nothing material to be found concerning this ſubject. The writings of this celebrated phyſician, as well as ſcholar, laſt mentioned, ſhew clearly that he was well acquainted with the hiſtory of phyſic, as alſo Celſus.

with the degree of perfection to which every branch of it had arrived in his day.

He begins with Æſculapius and his two ſons, viz. Podalirius and Machaon; then deſcends to thoſe philoſophers who were the moſt celebrated for medical knowledge, and conſequently the principal practitioners, namely, Pythagoras, Empedocles, and Democritus; and next to Hippocrates, who, he ſays, was the firſt that ſeparated medicine from the ſtudy of philoſophy. Soon after this, phyſic being divided into three parts, namely, diætetice, pharmaceutice, and chirurgice; he enumerates the principal authors (together with ſeveral of their opinions) namely, Diocles, Praxagoras, Chryſippus, Herophilus, Eraſiſtratus, Serapion, Appolonius, Glaucias, Heraclides, Aſclepiades, and Themiſon. Yet, from his writings, it appears that the art of midwifery was ſtill but beginning to dawn. The ſubſtance of what he ſays (ſee book vii. chap. 29.) is chiefly as follows; if the child lies acroſs, it may be turned by the operator's hand, either upon its head or feet; if the head is neareſt, a crotchet ſhould be introduced, in every part ſmooth, with a ſhort point, which is properly fixed either in the eye, or the ear, or the mouth, ſometimes even in the forehead, and then being drawn outwards, brings away the child. Yet, it is not to be extracted at any moment of time indifferently; for ſhould it be attempted * when the mouth of the womb is ſhut, there being no exit for the child, it breaks to-pieces, and the point of the crotchet ſlips upon the mouth of the womb itſelf, and there enſue convulſions, and extreme danger of death. Therefore, it is neceſſary to forbear, when the womb is ſhut; and when it opens, to draw gently; and every ſuch opportunity, to extract it gradually. The right hand muſt draw the crotchet; the left, being kept within, muſt pull the child, and at the ſame time direct it. It ſometimes

* This precaution, however, is neceſſary to be obſerved to the end of time.

happens

happens (ſays he) that the child is diſtended with water, and there is a fœtid ſanies diſcharged from it: if this be the caſe, the body muſt be perforated with the fore finger, that its bulk may be leſſened by the diſcharge of the humour; then it muſt be taken out by the hands only; for, the crotchet being fixed in a putrid body, eaſily loſes its hold; the danger attending which, I have pointed out.

But a child, being turned upon its feet, is not difficult to extract†; for theſe being taken hold of, it is eaſily brought away by the hand alone. If it be tranſverſe, and cannot be got into a proper direction, a crotchet muſt be fixed in the arm-pit, and gradually pulled; in this caſe, the neck is generally doubled, and the head turns back upon the body: the remedy is, to cut through the neck, that the two parts may be brought away ſeparately. This is done by a crotchet which reſembles the former, ſave that it is ſharp all along the internal part. Then we muſt endeavour (ſays he) to bring away the head firſt; after that, the reſt of the body; becauſe generally when the largeſt part is extracted, the head ſlips back into the womb, and cannot be extracted without the greateſt danger.

However, if this has happened, a double cloth muſt be laid upon the belly of the woman, and a ſtrong and ſkilful man ought to ſtand at her left ſide, and put both his hands upon the lower part of her belly, and preſs with one upon another; by which means, the head is forced into the mouth of the womb, and may then be extracted by the crotchet, in the manner above deſcribed.

With reſpect to the ſecundines (he ſays) whenever a fœtus is brought away, it muſt be delivered to an aſſiſtant, who muſt take it in his hands, and then the phyſician ought to draw the umbilical cord gently with his left hand, but not to break it, and with the right hand to follow it, as far as what we call the ſecundines, which were the

† This method will hold good alſo.

covering

covering of the fœtus within the womb; and taking hold of the extremities of thoſe, to ſeparate all the ſmall veins and membranes, in the ſame manner, by his hand, from the womb, and to extract the whole of it, and any concreted blood that remains within.

Moſchion. Moſchion is the next; according to the opinion of Aſtruc, he lived about eighteen centuries ago; but Smellie ſays, he is ſuppoſed to have lived in the reign of Nero, that is about ſeventeen. He was a Greek author, and wrote a treatiſe (ſaid to be the firſt) on the art of midwifery. However this may be, he ſays more to the purpoſe than either Hippocrates or Celſus, as may be eaſily perceived by the following abſtract.

In difficult births (he ſays) the parts are firſt of all to be relaxed with oil: if the paſſage of the urine is obſtructed by a ſtone in the neck of the bladder, the water muſt be drawn off with a catheter; if the fœces are indurated, give a clyſter, and pierce the membranes with a lancet. He ſays, the beſt poſition is that of the head preſenting, the hands and feet being mingled and diſpoſed along the ſides. If the poſition is not right, and cannot be amended by putting the woman in proper poſtures, he adviſes us to introduce the hand, when the os uteri is opened, and turn the child. If a foot preſents (ſays he) puſh it back, and bring the fœtus by both feet, the arms being preſſed down along the ſides: if the knee or hip preſents, they muſt be alſo puſhed back, and the child brought by the feet: if the back preſents, introduce the hand, and alter the poſition, by turning to the feet, or to the hand if it be neareſt; and if the head is large, it muſt be opened, &c.

Upon the doctrines of theſe three authors, above quoted, there aroſe, amongſt ſucceeding phyſicians and obſtetrick practitioners, a diſpute, with reſpect to turning the child for delivery, which exiſted above ſixteen centuries: one party, adhering to Hippocrates, taught, that whenever the child laid acroſs, or preſented in any unnatural po-



ſition

ſition, even if the feet offered, it ſhould be turned ſo, with the operator's hand, that the head might come foremoſt.

And the other party, abiding by Celſus and Moſchion, approved of bringing it by the feet.

Of thoſe who are reckoned adherents to Hippocrates, were Galen *(a)*, Galeatius of St. Sophia *(b)*, Bernard Gordon *(c)*, Eucharius Rhodion *(d)*, Mercurialis *(e)*, Mercatus *(f)*, James Ruef *(g)*, Liebaut *(h)*, Lazarus Pe *(i)*, Varandus *(k)*, and Perdulcis *(l)*.

And of thoſe who are reckoned to have adhered to the opinions of Moſchion and Celſus, were Aetius *(m)*, Paul. Ægineta *(n)*, Avicena *(o)*, Serapion *(p)*, Albucaſis *(q)*, Valeſcus de Taranta *(r)*, De Roche *(s)*, Alexander Benoiſt *(t)*, Ambroſe Parey *(u)*, and Marinello *(x)*.

(*a*) On the uſe of the parts, book xv. chap. 7.
(*b*) Comment. on Rhaſis, fo. 82.
(*c*) Philon partic. 7. c. 16.
(*d*) On the birth of man, chap. iii.
(*e*) On the diſeaſes of women, book ii. chap. 2.
(*f*) On the diſorders of women, book iv. chap. 3.
(*g*) On women's diſeaſes, book iii. chap. 2.
(*h*) On women's diſorders, book iii. chap. 46.
(*i*) On women's diſorders, book iii. chap. 48.
(*k*) On the complaints incident to women, book ii. c. 8.
(*l*) Univerſal medicine, book xiii. chap. 14.
(*m*) Tetrabibl. c. iv. ſ. 4. c. 22.
(*n*) On medicine, b. iii. c. 76.
(*o*) Canon. fen. 21. tract. 2. c. 20.
(*p*) Breviary, tract. 5. c. 35.
(*q*) Surgery, part ii. c. 75.
(*r*) Book v. c. 20.
(*s*) On women's diſorders, c. 27.
(*t*) B. xxv. c. 36.
(*u*) B. xxiv. of generation, c. 15. 33.
(*x*) On female diſorders, b. iii. c. 11. 76.

Paræus (the laſt but one of thoſe mentioned) wrote pretty fully upon this head, and expreſsly ordered the child to be brought away by the feet, in all preternatural caſes.

Guillemeau, his pupil, adopted his plan; and, after having had experience, confirmed it by publiſhing an excellent treatiſe on midwifery.

Soon afterwards, viz. in the year 1668, Mauriceau, after an extenſive practice in the Hôtel Dieu and city of Paris, publiſhed another treatiſe on the ſame ſubject, which confirming the practice, and far exceeding every thing that had been publiſhed before it, this way of delivery gained the victory ſo quickly, that we may reaſonably preſume, it is now become almoſt univerſal.

Their other way of delivering by hooks and crotchets, ſometimes dividing the child previouſly with edged inſtruments, like thoſe recommended by Hippocrates and Celſus, in caſes where the head did not preſent naturally, nor could be brought, by the operator's hand, to advance properly in that direction, ſeems to have prevailed till very lately. Becauſe, upon ſurveying the works of the ancients, it does not appear that there were any inſtruments contrived to ſave children, before the time of Rhazes, an Arabian phyſician, who lived at Bagdat, in the latter end of the ninth century, when a fillet is hinted to have been uſed for that purpoſe.

Avicenna, another Arabian phyſician, who lived about the beginning of the tenth century, mentions this fillet, and likewiſe a pair of forceps, which probably was deſigned for the ſame purpoſe. For, after recommending the old method of aſſiſting in natural labours, he ſays, if the woman cannot be delivered by theſe, a fillet muſt be fixed over the head: if that cannot be done, it is to be extracted by the forceps; and, ſhould theſe fail, the ſcull is then to be opened; by which means, the contents will be evacuated, and the fœtus eaſily delivered.

Albucaſis,

Albucaſis, who was the next Arabian medical writer, and who lived about a century after Avicenna, has favoured the world with figures of all the obſtetric inſtruments then uſed; amongſt which, there is an impellens, to keep up the body of the child, while the operator endeavours to reduce the head into the natural poſition; and two kinds of forceps, whoſe clams, near the points, expand into a circular form, furniſhed with teeth on the inſide. When the head is of an extraordinary bigneſs, he directs it to be cruſhed, or broken with theſe forceps: the larger he calls almiſdach, and the other miſdach. Beſides theſe, he delineates another pair, whoſe clam is in the form of a rhombus. This, probably, reſembles the pair mentioned by his predeceſſor Avicenna; though, by the form of this pair, and of the other two, we can hardly believe that children could be ſaved by either of them. And as to the fillet, I may reaſonably ſuppoſe, that every one who is acquainted with the nature of ſuch caſes, muſt know likewiſe how difficult it muſt be to apply it; and when ſuch is applied, how uncertain it muſt be, even then, of ſucceſs. Can we reflect on all this, and not commmiſerate the unhappy lots of many mothers, as well as of thouſands of children, who, by ſuch means, could not be ſaved?

Nay, from this time, if any better means were diſcovered, none were made public till 1733, when Mr. Chapman, an Engliſh ſurgeon, publiſhed a treatiſe on midwifery, wherein he deſcribed the uſe of forceps; and gave a cut of them in a ſecond edition, two years afterwards.

Theſe forceps are generally believed to have been invented by the Chamberlens; a medical Engliſh family, which flouriſhed ſince the time of Mauriceau. One of this family, namely, Dr. Hugh Chamberlen, publiſhed a fifth edition of his tranſlation of Mauriceau's firſt volume, 1716; in the preface to which, he tells us, that his father, brothers and himſelf, had attained to, and long practiſed a way to deliver women without any prejudice to them or their infants,

even in ſuch caſes as uſed to be treated with hooks, by which one or both muſt be endangered, if not deſtroyed. Nevertheleſs, he apologizes for not divulging the ſecret, by ſaying, that as his father and two brothers were then in practice, a publication thereof could not be made without injury to them. What he here ſpeaks of, is generally allowed to have been the forceps: if ſo, they were not long in the hands of the Chamberlens only, for Mr. William Giffard (another Engliſh practitioner in midwifery, diſtinguiſhed by his integrity, as well as humanity) did uſe forceps at times, from the eighth of April 1726, to the end of his practice, as appears by his caſes, which were publiſhed after his deceaſe by Dr. Hody; who gives us a figure of his forceps or extractor, that nearly agrees with Chapman's. The other figure is an exact repreſentation of an alteration (as I judge from a pair of them in my poſſeſſion) I cannot ſay an improvement made by Mr. Freke; who had a mechanical genius, though he was never diſtinguiſhed as an artiſt in midwifery.

Beſides theſe, I have a pair of forceps which did belong to Mr. Drinkwater (late ſurgeon and man-midwife at Brentford) who began practice in 1668, and died in 1728. The ſize and form of this pair, agrees with thoſe of Chapman and Giffard, ſave only that the hooks of the handles are turned outwards. It muſt undoubtedly be allowed, that the three pair of forceps here mentioned, did far exceed thoſe of the Arabians; nevertheleſs, they are ſo very clumſy, and ill adapted, that we can hardly conceive how they could be uſed without injury, even in the hands of ſuch expert operators as Chapman and Giffard; for they are ſtraight, and meaſure ten inches in the clams, five and a half in the handles, which make fifteen and a half in the whole length; the rings, towards the points, are roundiſh, and meaſure two-eighths of an inch thick; and as to their weights, though a little different, taking the medium, each of them weigh twenty ounces Troy. Their forms may be judged of by the cuts in the books mentioned.

From

From what has been obſerved, it may ſeem to ſome very ſtrange, that ſo many thouſands of years could paſs away without the diſcovery of more proper means for improving the art. The wonder will leſſen however, if we conſider the extreme ſlow progreſs that has been made in moſt of the other arts and ſciences; and more eſpecially if we reflect on the time in which the greateſt part of this practice was in the hands of females. And beſides, although the attempts which the male practitioners above-mentioned did make to improve it, may ſeem but rude and awkward to us now, we ſhould, nevertheleſs, own fairly that we are much obliged to them; for by their hints, the art has gradually advanced towards perfection, as appears evidently by the ſeveral improvements which have been made during theſe thirty years paſt.

Mr. Livret, an accoucheur in Paris, publiſhed a treatiſe on midwifery (1751) with figures of forceps, invented, as he ſays, by himſelf, and uſed two years before the time he publiſhed. Theſe forceps are an improvement on the Chamberlen's in ſome reſpects, ſeeing they are ſomewhat flatter and ſmoother on the outſides; their clams too are ſhorter, and what is more, they are curved, which is the firſt hint of this kind (ſo far as I know) that has ever been publiſhed. On the outer edges of their clams, internally, there is a pretty high ridge, which cannot avoid being hurtful to the child: but as I had rather deſcribe than criticiſe, I ſhall add, that each clam, towards the point, is near two-eighths of an inch thick, and ſeven inches and a half in length; and the handle eight inches three-quarters; ſo that in a ſtraight line, they meaſure in all above ſixteen inches; and they weigh alſo above twenty ounces Troy.

Dr. Smellie (to whoſe mechanical plan the art of midwifery will ever ſtand indebted) made ſeveral improvements on this ſubject. He altered the Chamberlen's forceps to a better form, as may be ſeen by his plates; the length of the clams he reduced to ſix inches and a half;

and that of the handles to five; in all, making eleven and a half: the weight was reduced to twelve ounces Troy; and to avoid diſagreeable uneaſineſs or hurt to the patient, he covered them with leather.

He had alſo contrived a curved pair, nearly of the ſame weight and length as the former, which was ſhewn to me by his ſucceſſor, Dr. Harvie, on the fourth of July, 1766. This pair was but ill made, and ſeemed to have been the firſt attempt. But thoſe of this kind, which he recommended (in preternatural caſes, where the body comes forth, and the head ſticks above the brim of the pelvis) were uſually about twelve and a half, or thirteen inches long.

The doctor took the hint of this curvature, as I imagine, from Mr. Livret; for when I attended his lectures in 1750, there was nothing ſhewn of this kind. A pair of ſciſſars to open the head, was alſo invented by the doctor; and he improved the crotchets. In ſhort, his inſtruments were ſo well received, that they have been generally uſed almoſt ever ſince.

Mr. Pugh, a ſurgeon at Chelmsford in Eſſex, publiſhed a treatiſe on midwifery in 1754, with figures of curved forceps, which was firſt ſhewn to me by Mr. Cargill, in Lombard-ſtreet, in 1764; at which time, I left with him a pair of thoſe which I ſhall recommend hereafter, as a pattern to make ſome by, that I might finiſh them myſelf, and preſent them to my friends. Before this time, I knew nothing of either this gentleman or of his productions: I have now read his book, and find in it ſome uſeful obſervations; and as to his forceps, they appear to me preferable to any of thoſe which were publiſhed before them; but to return:

Beſides forceps, fillets alſo of various ſorts have been invented ſince the time of Rhazes, in order to ſave the child; and great exploits pretended to have been done by them: but as I doubt of their efficacy, and, on the other hand, perceive the difficulty, if not danger, that muſt attend the application of any thing of that kind upon the head

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in the pelvis, where ſo little room is to be found; I ſhall ſay nothing farther concerning them.

§. III. From what has been ſaid above, it appears evident, that here, as in every other art and ſcience, one improvement naturally leads to another. That I may not, therefore, ſeem to aſſume too much to myſelf, I ſhall now proceed to lay before my readers thoſe hints which ſuggeſted to me, what I take to be ſtill a greater improvement.

Firſt then, as to the forceps; the manner of uſing which, in the machine, I thought I had perfectly known by Dr. Smellie's lectures: but not long after, being called to a caſe that required them, I placed one ſide according to the doctor's directions, and then the other; immediately upon which, the edges of both came cloſe together; for, by paſſing the hand as a director to the ſecond, the head was a little raiſed in the pelvis, and a vacuity made in the hollow of the ſacrum; which, together with the ſlipperineſs of the parts, made the firſt ſide of the forceps ſlide this way. I endeavoured to ſlide them apart to their proper places; but finding that this required more force than I durſt venture to apply, I deſiſted. Another caſe happened, and I believe a third; but meeting with the ſame difficulties, I laid them aſide, and never uſed them more. Some, no doubt, will now exult and ſay, that this was not owing to any fault in thoſe inſtruments, ſeeing ſo many gentlemen have ſucceeded by them, but only to my want of dexterity. If ſo, let them; but ſo it happened.

From this time, I became particularly attentive to the operations of nature in all caſes; but more eſpecially in thoſe where the head advanced through the pelvis with great difficulty, in order that I might diſcover the full extent of her power, and know when and how ſhe ſtood in need of help. By this attention, I perceived the efforts that ſhe made; firſt, to force the head into the brim of the pelvis; ſecondly,

condly, to mould it (as it were) into ſuch a form, as to make it paſſable through the ſuperior narrow part; thirdly, to drive it forwards, and, at the ſame time, dilate the os uteri; fourthly, to move it round before the inferior ſtrait, as deſcribed in Part I. Chap. IV. §. VI. and fifthly, to enforce a ſecondary labour, in order to bring it through the os vaginæ. I ſay, a ſecondary labour, for by the time that the os uteri was perfectly opened, and the vertex had arrived at the os externum, the ſtrength of nature was uſually exhauſted; the pains, conſequently, became feeble and ineffectual; ſo that a ſpace of twelve hours, nay, ſometimes twenty-four, or more, was commonly ſpent before ſhe could recover herſelf ſufficiently to renew the attack; and after all, it was not unuſual to ſpend twelve hours more to compleat the delivery; the patient exerting her utmoſt efforts all the while! Now, by ſeeing and conſidering this (though, in my own mind, I had condemned all inſtruments except hands) I was truly convinced that an artificial force, by means of ſome inſtrument, was neceſſary, in order to deliver women from this hazardous chance, as well as tedious torture, of what I have called (for I do not know what other name to give it than) a ſecondary labour. I ſay, hazardous chance, for by the violent continual preſſure of the child's head upon the fleſhy parts of the pelvis, and the compreſſure of that upon the head, very bad effects to both the mother and child have been produced; for the truth of which, I appeal to all who have any experience in the art.

The point, then, was to conſider what inſtrument ſhould be uſed. The pelvis being full, there was no room for the application of fillets; and my opinion being fixed, after deliberate conſideration, that nothing was, or ever could be invented, that would apply the force required, with more ſafety to mother and child, than a forceps; my buſineſs, I thought, was to avoid the difficulties which I had met with before, and to contrive ſuch as would give leſs pain than any of thoſe which had hitherto been invented. Accord-

Accordingly, I invented a pair with a tranſverſe ſlit or aperture, in one of the ſides, at the juncture between handle and clam; through which (this ſide being firſt placed in the pelvis) I paſſed the other gradually round the head, in oppoſite directions; for this was a director to the other, and kept it alſo ſteady. By theſe, I delivered ſeveral women, both with ſafety to themſelves and their children, and eaſe to my ſelf. In other caſes, meeting with much difficulty in applying them cleverly on the head, I began to ſuſpect, that this was owing to the curved or winding form of the pelvis, within which they were to be uſed, as well as to the form of the child's head, upon which they were to be applied: hence, I bethought myſelf, that ſome contrived with curves might ſtill do better. But here aroſe another difficulty; for in thoſe I foreſaw, that one could not be made to paſs through the other without twiſting at the points, ſo much as to hurt the woman; and, beſides, perceiving that with this joint they could not be applied ſo commodiouſly in the pelvis, as to ſuit every caſe that might occur, I therefore laid aſide the foramen (though a favourite) and choſe Dr. Smellie's joints, only taking care that they ſhould be deeper and cloſer than his. I now made drawings, and having thereby got ſome forged, I finiſhed them to my mind, as repreſented in Plate VI. Fig. 1. 2. and 3.

In the execution, my intentions were, firſt, that the large curves ſhould correſpond as nearly as poſſible with that of the pelvis; ſecondly, that their points ſhould be thrown forwards, and made round, to prevent their hitching, or even preſſing uneaſily againſt any part of the pelvis, and likewiſe to maintain their hold of the head, whilſt it is to be brought forwards in that curved line of direction which nature obſerves; thirdly, that an inverted curve ſhould be made towards the joints, whereby the perinæum may be ſaved from injury, the extracting force rightly conducted, and the handles, at the ſame time, kept from preſſing uneaſily on the inferior and anterior parts of the pubes;

fourthly, that their ſubſtance ſhould be reduced as much as poſſible, ſo that they are not made flexible, or ſo thin at the edges as to hurt the parts; fifthly, that their clams be made to preſs equally on the child's head, and ſpread gradually from the joint, ſo as not to dilate the os vaginæ too ſuddenly; ſixthly, that their clams be of a due breadth, with the outer ſurface a little convex, and extremely ſmooth, that they may not preſs uneaſily, or hurt the woman; ſeventhly, that their length be ſuch as can be applied ſafely and commodiouſly within the pelvis, and at the ſame time, ſuit the different ſizes of heads as much as poſſible; and eighthly, that they be covered with leather of due thickneſs, and extremely ſmooth on the outer ſurface.

Theſe were my reaſons for altering the forceps; and as by due experience I can aver, that, by theſe alterations, they may be uſed with much more ſafety and facility than any others I know of, when applied, as will be directed hereafter. I preſume to offer them to the public.

Secondly, as to the perforator and embryulcus, theſe were produced from the following circumſtances: in 1753, being called to a caſe which obliged me to uſe a crotchet (as thoſe improved by Dr. Smellie) I found, thereby, the utmoſt difficulty in guarding the woman from being injured by the point of this inſtrument; for each hold which I took of the head tore and gave way, before I could apply force enough to bring the child along.

Another caſe happened about a year afterwards, that was ſtill worſe; in this, the obſtruction being extremely great, and many holds giving way, my hands were exceſſively hurt in preventing the point of the inſtrument from ſtriking againſt the woman. By the difficulties I met with in theſe two caſes (which were the only times I uſed crotchets) I became as much diſguſted with them as with the forceps, and never uſed them more. Some years afterwards, having

met

met with more caſes, which convincing me fully that there was ſtill a demand for this kind of help; I began to conſider if ſomething could not be invented, that might be uſed with leſs danger and difficulty. Accordingly, I cōntrived a curved perforator to open the head; and a pair of forceps, one jaw of which was to be introduced into the head, and the other applied upon it. Theſe forceps were curved ſomewhat in form of the letter S, whereby they might be uſed with the more conveniency.

A caſe, requiring the aſſiſtance of the crotchet, happening, I uſed theſe forceps, and found this advantage from them, that there was much leſs danger of hurting the woman; but the bones of the ſcull were ſo ſoon broken, that I could not obtain ſuch a hold as was required to extract the child. I therefore laid them aſide alſo; and ſet about improving an extractor recommended by Dr. Burton of York. My intention in this, was to make one of a ſimpler conſtruction, and whoſe form ſhould be more ſuited to that of the pelvis than his: its ſhank and handle were, therefore, to be in form of the embryulcus hereafter to be deſcribed; the point was to be the perforator; and two inches from thence, two arms were to be joined by hinges to the ſides of it; each of theſe arms was to be an inch and a half long, and made to lie along the ſides of the ſhank, with their extremities towards the handle; by which poſition, when the inſtrument was puſhed forwards till theſe arms were entirely within the head, and then pulled back, they might ſpread out in right angles with the ſhank, by which a pretty good hold muſt be obtained.

According to this deſign, I had made drawings, and was making a a model in wood alſo, when Dr. Lewis of Kingſtone, happening to call, and ſeeing what I was about, told me, that it put him in mind of ſomething belonging to fiſhing-tackle, which conſiſted of two needles, or very ſmall rods of ſteel, joined together with a pin; by which means, one of them could turn directly acroſs the other, and

thereby make two arms. I never ſaw it, nor do I know the name of it: but improving this hint, I compleated the inſtrument according to the figures in Plate VIII. though with ſome difficulty in the execution; for, upon this principle, the point could not ſerve as a perforator: I therefore made another inſtrument to anſwer that purpoſe, as well as a director, ſee Plate VII.

I have uſed theſe (in caſes which truly demanded ſuch kind of help) and being thereby convinced of their ſuperior advantages, I recommend their uſe before that of any others I am acquainted with.

The round holes towards the point of the catheter, Plate IX. Fig. 2. were invented (as I am informed) by Dr. Middleton, the younger. The point terminates in a little knob, which I contrived to avoid, as much as poſſible, its cauſing pain in paſſing along the urethra; and when it happens to touch the inner ſurface of the bladder. As to its length, I reduced that only for the conveniency of carrying.

With reſpect to the little forceps, Fig. 1. and peſſaries, Fig. 4. and 5. and the ſyringe, Plate X. the hints of theſe improvements aroſe wholly from my knowledge of the pelvis and its viſcera; and from caſes which required this kind of inſtrumental aſſiſtance.

Directions to the inſtrument-maker.

§. IV. Many more difficulties have happened, in getting the above inſtruments only forged to my mind, than any perſon could imagine: nay, ſome I have finiſhed as perfectly as thoſe of the copper-plate, and given them as patterns to mechanics, in London, whoſe buſineſs it was to make them; nevertheleſs, many, nay indeed moſt of them which have been made, are ſo ſtrangely varied, as to render them, in a great meaſure, improper for the purpoſes for which they were intended. I ſhall, therefore, add a few directions, from which, I think, future errors cannot ariſe, unleſs deſignedly; and by which the man-midwife may know when they are made right; if they are not, he muſt be blameable to have them; and much more ſo to uſe them;

them; for none of the chirurgical inſtruments require more exactneſs than they do, if ſo much.

Firſt then, the forceps muſt be made of caſt ſteel, or fine iron caſe- Plate VI. hardened; but as in this temper they are apt to be twiſted in the fire, the former is moſt eligible.

They conſiſt of two blades or parts, each of which is diſtinguiſhed Fig. 1. by the handle A B, the joint C D, and the clam E P.

Their out-lines and forms muſt be made exactly to thoſe of the figures; but as their length and breadth may alter a little by the paper's ſhrinking after it is printed, we ſhall add thoſe dimenſions which have been found to be the moſt convenient in the obſtetric practice.

Figure 1. repreſents the exact form and length to which one of the blades muſt be made before it is bent into its perfect ſtate, as repreſented by A B C D, figure 2.

The dimenſions of this blade, as it thus lies horizontal or flat, muſt be as follows:

The handle, from A to C, four inches; the joint, from C to D, Length. a quarter, or rather more than three-eighths of an inch; and the clam, from E to P, ſix inches and ſeven-eighths; in all, making eleven inches and near three-eighths.

Its breadth, at A, muſt be an inch and one-eighth; at B, four- Breadth. eighths and a half; C D five eighths; E one-eighth and three-quarters; F, four-eighths; G, five-eighths; H, ſix-eighths; I, ſeven-eighths; K, one inch; L, an inch and one-eighth; M, an inch and two-eighths; N, an inch and three-eighths; and at O, an inch and near one-quarter.

The clam muſt have a perforation extending from I to Q; and correſponding with the curvature of the blade. The edges of this aperture muſt be taken off or rounded; ſo as to form ſomething of a concavity on this ſide of the blade. The handles alſo, muſt have the three

holes R, to receive the ſcrews, by which the wooden part is to be fixed.

Fig. 2. Both parts being finiſhed and locked, as delineated by figure 2. they will be ſhortened about three-eighths; therefore meaſure eleven inches.

Length. The length of the clam now from E to F, muſt be ſix inches and two eighths; and its width, from G to H, exactly two inches and a half.

Width of the clam.

Thickneſs. The metalline part of the handles I K, muſt become gradually thin, from the joint towards the extremity; ſo that the principal part L M, may be made of wood, for the ſake of lightneſs. The thickneſs of the handles at I, muſt be ſeven-eighths of an inch; at M, five-eighths; and from thence towards the joint gradually thinner, making ſcarcely four-eighths at L K.

The thickneſs of the clam, at E, muſt be two-eighths and a half; at N, one and a half; G, one and a quarter; at O, full one; and at F, ſcarcely one.

When they are reduced to theſe forms and dimenſions, their edges muſt be made extremely round, their ſurfaces very even, and well poliſhed, ſo that they may neither contract ruſt, or give pain by any acute or unequal preſſure.

They muſt be neatly covered with the beſt Morocco leather, which firſt hath been ſhaved down till its thickneſs is rather leſs than half an eighth; then, being moiſtened with water, and laid over with the grain ſide outwards, it muſt be extended till its outer ſurface becomes even and ſmooth (without any cracks or cuts) and then ſewed with waxed ſilk. This ſeam muſt be extremely neat, and as ſmooth as

Fig. 3. poſſible. It muſt run from A to B, and from that to C, along the under and inner edge of the handles; and from thence, along the upper edge of the joints D E, to the middle of the inner ſurface of the clam F G H I. When near the points, the leather being cut

into

into narrow ſlips, theſe muſt be lapped a little over each other, and neatly ſtitched down, as repreſented by the figure. I prefer this leather, becauſe it is not ſo liable to become looſe or ſpongy, as calves leather or any other, which I have tried.

When perfectly finiſhed, as here deſcribed, their weight ſhould not exceed eleven ounces Troy.

The director A B, to the embryulcus, muſt be made alſo of caſt ſteel; its length muſt be about nine inches; its thickneſs, near the handle A, two-eights of an inch; and at the groove B, about half an eighth: the edges of the groove muſt be ſo much rounded, as not to be liable to cut, or even to hurt any part of the woman; but the point C muſt be made ſharp enough to perforate the head of the child. Director. Plate VII.

The ſecond figure repreſents a ſide view of this inſtrument; the handle C E, the groove F, and the point D. It is curved to ſuit the curvature of the pelvis; the point is turned back to come near to a ſtraight line, by which it may perforate the head more readily; and the handle is formed into a ring E, to render it light, and ſerve alſo as an index, whereby the operator may know when the groove ſide is towards his hand, &c. It muſt be finely burniſhed, and when finiſhed, need not weigh above an ounce Troy. Fig. 2.

The embryulcus or eductor (by either of which names it may be called) muſt be made of German ſteel (caſt the beſt); it muſt be well burniſhed, and when finiſhed, weigh about two ounces and a half Troy. Plate VIII.

Its length, from A to B, muſt be eight inches; and from the joint B, to the point C, an inch and a half. The ſhank E, muſt be made as round as poſſible, and meaſure, in thickneſs, about two-eighths of an inch; the extremity A F, which makes the handle, muſt be bent exactly like the figure; and terminate in a ring tranſverſely to the direction of the ſwivel. Fig. 1.

This

This termination is delineated by figure 2. A, a ſection of the ſhank, and B the ring.

Swivel. The ſwivel C D, muſt be two inches and full five-eighths in length; flat on the ſide twards B, and convex or round on the ſide towards D, the extremities muſt be like thoſe of the figure, and made as ſmooth as poſſible.

Figure 3. is given as a direction for making the hinge or joint; A, the groove in the ſwivel, which receives B, the extremity of the ſhank; and C the thickneſs of this part of it, wich is to move in the groove.

Figure 4. is for the uſe of the operator, as will be obſerved in its proper place.

Plate IX. The ſmall forceps muſt be made of caſt ſteel likewiſe, and not much tempered; for it is better to be a little flexible than liable to break in the operation, ſeeing they are required to be as little bulky as poſſible.

They muſt be exactly formed to the figure, having neither edges nor ſharp ridges to cauſe pain, or any hurt to the patient. The inſide A of the points, muſt be made a little concave; and from the ſurface of this concavity, there muſt be raiſed, obliquely up, many ſmall teeth, like thoſe of a coarſe file; but the edges C, about theſe teeth, muſt be round, and very ſmooth. The length (when finiſhed) need not exceed five inches and a half, nor the weight ſeven drachms Troy.

Fig. 2. The catheter A B, need not exceed ſix inches and a half in length; its concave and lateral ſides muſt be perforated with a row of ſmall

Fig. 3. holes C D E, near to the point F, which (as obſerved before) muſt terminate in a knob.

With reſpect to peſſaries, as their ſizes muſt be ſuited to the caſes that require them, we ſhall only give the dimenſions and figure of one, in three views, by way of example.

They

They may be made of fine cork, firſt formed by a knife, then ſmoothed by a file, and finally, covered with a ſufficient quantity of white wax. Wood, that can be well poliſhed or made of an extremely ſmooth ſurface, is preferable to the above; ivory is ſtill better: but ſilver is beſt of all. If any perſon prefers gold, I have no objection to it. But as they are made hollow with plates of ſilver neatly ſoldered together, and ſo thin, as one of the above dimenſions to weigh only two ounces Troy; and ſo highly poliſhed on the outer ſurface, as not only to remain very clean, but extremely eaſy to the patient; I preſume there will be very little need to ſeek any better metal for this purpoſe.

Their form, externally, muſt be like the figures, to ſuit the vagina; and internally, to ſuit the reception of the os and cervix uteri; what I mean here by cervix uteri, is that part of it which projects into the vagina. The dimenſions of that given, being near the medium, viz. the length AB, being two inches and a half; the breadth CD, two inches one-eighth; and the depth EF, an inch and near two-eighths; the ſizes or dimenſions of others may vary from this, viz. from one-eighth to two, and ſo on, either above or below it, as the caſe may require, excepting the depth; which, I think, ſhould be kept very near, if not entirely to this given. Fig. 4. 5. and 6.

The magnitude alſo of ſyringes may vary, but that given in Plate X. I take to be a very commodious one. The barrel of this ſyringe is made of fine pewter, and contains two ounces and a half; the pipe is made of ſilver for the ſake of cleanlineſs and ſtability, admitting ſtill of a due degree of flexibility. It muſt be four inches and a half in length; the diameter one-eighth; and the point, formed into a knob, one-eighth larger; perforated with four or five holes, wide enough to allow any fluid to paſs through them.

CHAP.

## CHAP. I.

## OF THE NATURAL POSITIONS OF THE CHILD.

AS it is obſervable that the head, duirng the firſt three months, is nearly (if not entirely) as large as the reſt of the body; and, when ſuſpended in water by the funis, preponderates, and points obliquely downwards; we may venture to ſuppoſe, that it will naturally fall into ſuch a poſition as this, when ever the mother's body is erect. By what has been obſerved in Part I. Chap. VIII. Hiſt. 3, 4, 7, 11, and 12. it muſt however be owned, that the head does not enlarge in proportion to the reſt of the body; but then we ſee alſo, by the ſame obſervations, that the quantity of the liquor amnii is reciprocally diminiſhed as the fœtus encreaſes; ſo that in the latter months there is leſs room for the head to be turned either acroſs the uterus, or towards the fundus; unleſs aſſiſted by ſome accident, as a fall, a jolt in a coach, or ſome habitual ill poſition of the mother's body, &c. Moreover, its turning to theſe poſitions will ſtill ſeem more difficult, if we conſider, that even at the birth, the lower extremities are not ſpecifically heavier than the head. It is alſo to be obſerved by the touch at times, from the middle of the ſixth to the end of the ninth month, even when the woman lies horizontally, that the head is commonly downwards, ſometimes bearing a little on the os and cervix uteri. I ſay commonly, for we muſt allow, that in ſome caſes, it cannot be felt till the labour is begun, and often then not till a conſiderable quantity of the liquor amnii is run off; when it will deſcend, and advance firſt. But in ſuch caſes, the quantity of this fluid is uſually very large in the latter months.

§. II. Be-

§. II. Before the end of the fourth month, the quantity of the liquor amnii being large, the fœtus ſwims about in this fluid, and turns itſelf into various poſitions, which may alſo be excited by the movements of the mother. By this liberty of motion, it often entangles its neck, and other parts of the body likewiſe, in circumvolutions of the navel ſtring, as may be ſeen from the following caſe.

In July 1766, Mr. Thomas Hardwick, ſurgeon, brought me a fœtus (about four months old) who was entangled thus: the funis A, paſſed from the navel B, over the outſide of the right thigh C, and under that ham D, to the inſide of it E; from thence up to the right ſhoulder F, round acroſs the hind and left ſides of the neck to the fore part G; and from thence, acroſs over the right arm H, round it with a twiſt I; the extremity K coming out forwards between this circumvolution L, and the exilla M.

By this entanglement, the right knee was pulled very cloſe to the anterior part of the body; and the lower part of the thigh was rendered ſmall by the preſſure of the ſtring: the neck had ſuffered alſo, but the arm moſt; for the funis had made a deep ſulcus all round it juſt above the elbow. The obſtruction of the circulation, by thoſe circumvolutions, was probably the cauſe of this abortion; but to return.

§. III. The head (according to my humble opinion) points more downwards, and the anterior part of the body more towards one ſide of the mother, or more directly backwards, as pregnancy advances.

With reſpect to the other parts, the chin reſts upon the breaſt; the knees incline towards the navel, and ſometimes have the upper part of the head between them; the heels come pretty cloſe to the lower part of the nates; and the hands lie flat on the outſide of the thighs, or paſs a little over them.

## CHAP. II.

## OF NATURAL PARTURITION, AND ITS SUBSEQUENT SYMPTOMS.

Definition. BY natural parturition, is here meant the moſt ſafe and ſpeedy way whereby a woman, at the completion of pregnancy, can bring forth a perfect child. There is a peculiar order manifeſted by every ſpecies of animals, with reſpect to the time of their uterine geſtation: but we ſhall only take notice of our own ſpecies, whoſe females compleat their pregnancies in nine ſolar months; that is, in the fortieth week after conception.

Cauſe. §. II. The reaſon why women bring forth their children at this time, ſeems to proceed from a cauſe common in all animals, and plants alſo; namely, an energy or power implanted in their natures at the beginning, whereby they are enabled to expel or caſt forth their fruits when ripe.

In women there are other cauſes, which may in ſome degree aſſiſt; as for inſtance, the child, at this time, being bulky and ponderous, will bear upon the neck and orifice of the uterus (eſpecially in ſuch women who ſtand or walk much) by which preſſure, thoſe parts may become gradually more thin and yielding.

Its muſcles alſo being now perfect, and capable of every action, its motions are uſually ſtrong; and as it endeavours at times to ſtretch itſelf, the orifice hereby muſt undergo an additional preſſure; and this being now the moſt dilatable part, and ſituated not far from the center of gravity, muſt conſequently give way.

Add

Add to theſe, that the child, at this time, being ſo large as to require a greater ſupply of nutrition than what the mother can ſpare; her whole fabric will the more readily conſpire to expel it. And itſelf being now ſenſible of the want, will naturally ſtruggle, and ſomewhat aſſiſt in its own diſmiſſion.

Hence, the uterus being irritated, together with ſuch parts as have any dependency on its action; the conatus uterini, or expulſive endeavours, called pains, will conſequently enſue.

§. III. This parturition diſplays itſelf in the following manner: the abdomen, as high as the ſcrobiculum cordis, having been more or leſs prominent till the preceding day (ſometimes a little ſooner or later) now ſubſides above the navel, and the patient feels herſelf commonly lighter, and more eaſy than ſhe had been for ſome time paſt. The ſigns and natural progreſs.

This falling in above is ſucceeded by a greater fulneſs or prominency between the navel and pubes, which become more manifeſt when the conatus uterini, called alſo labour, begin. Some have alſo a cold chill or rigour in the beginning of labour.

The pulſe begins to riſe, and the face, which uſually before had loſt a little of the natural floridneſs, begins to redden; both of which become more perceptible as the labour advances; the alvine tube begins to unload itſelf; the pains begin about the ſmall of the back, from whence they paſs around, forwards, downwards, and terminate in the pubes and pudenda. They uſually, at firſt, return every twenty or thirty minutes; and are ſo ſhort and weak, as to make but little impreſſion on the neck and orifice of the uterus. But an hour or two being elapſed, ſometimes leſs, they encreaſe in ſtrength, are more frequent, and cauſe the child to bear down with a conſiderable force. By the pulſe and face.

At this time, the os uteri begins uſually to dilate and give way; the patient retches, and the ſtomach ſometimes diſcharges its contents. By the os uteri.

To the touch, the labia pudendi feel ſomewhat flabby and tumified; the vagina is ſoft, and a little opened and ſhortened; the os uteri is dilated to about the breadth of a ſix-pence or ſhilling, its edges are ſoft, and in ſome not thick; it is ſituated at ſome diſtance behind the center of the pelvis, ſometimes near the os ſacrum, and a mucus proceeds from it, which moiſtens, and probably helps to relax the vagina.

By the child's head.

The head of the child bears now on the cervix and os uteri; and the membranes being diſtended with the liquor amnii, and formed into a round bag, preſents before it at the orifice during each pain.

Pains increaſe.

The pains increaſe in ſtrength; and, inſtead of twenty or thirty minutes, recur every ten or fifteen; cauſing the os uteri to give way, in proportion to the impelling force of the child's head upon the amnion tumor.

Os uteri opens.

An hour or two being thus elapſed, they grow ſtill ſtronger, and return every five or ſix minutes; the os uteri gradually gives way and opens; the neck conſequently becomes leſs perceptible, eſpecially towards the os ſacrum, where it now is ſcarcely to be felt: but from thence to the ſymphyſes of the pubes, it is ſtill extended before, about a quarter of the head: the amnion-tumor, however, enlarges in the orifice, and advances gradually along the vagina, whereby the latter is ſhortened and widened.

The os tincæ or uteri, when thus dilated to the breadth of a crown piece, or a little more, uſually deſcends to about the middle of the pelvis, and moves forwards to near its center. As it deſcends lower, the poſterior ſide obliterates firſt, and then the lateral ſides; but the anterior ſide remains yet before a conſiderable part of the head.

Natural poſition of the child's head when it enters the pelvis.

By this time, the child's head has entered the pelvis, with its face towards one ilium, or a little diagonally backwards, from that part where the pſoas muſcle and poparts ligament decuſſate; and when the crown has arrived to the middle of the pelvis, or nearly equal to the

the lower edge of the pubes, the anterior part of the cervix uteri is pretty much obliterated; the orifice is widely opened, its anterior edge is become thicker, and ſo near to the inſide of the pubes, that a little of it only remains before the head; and the amnion-tumor being now large, and advancing faſt, ſerves to dilate the vagina as well as its orifice, to make way for the birth.

When the membranes uſually break.

When the pains return every three or four minutes, and bear down about the ſpace of a minute, the membranes uſually break, and the liquor amnii (commonly called the waters) flows; upon which the pains generally ſlacken, ſometimes the ſpace of half an hour or more, and then recur with double force.

The head begins now to advance through the os tincæ; and, by a few pains, deſcends near to the perinæum; during which time, the anterior part or ſide, T, of the cervix uteri, aſcends gradually up between the head and inſide of the pubes; ſoon afterwards, the anterior ſide of the orifice, which remained before a conſiderable part of the head, in form of a ſemi-lunar tumor, comes to the ſymphyſes of the pubes, and quickly paſſes up between the lower edge of that bone and the child's head, ſo as not to be felt. About the time this happens, there is uſually a ſecond emiſſion of mucus from the orifice, mixed with blood, and the patient commonly retches. Plate III.

The head now being quickly ſo far advanced, as to fill the bottom of the pelvis, and to bear againſt the perinæum; the labia pudendi begin to be extended; the os vaginæ to be conſiderably opened, perceptibly dilating by each pain, and forming a circumſcribed ſpace about three inches wide, betwixt the lower edge of the pubes and the anterior edge of the perinæum; in which ſpace, the part of the head that preſents is uſually of a roundiſh form, and the ſutures may be eaſily felt.

By this time, the vertex is moved forwards from the ſide of the pelvis to near the ſymphyſes of the pubes; and nearly as low as its under edge.

From

From this edge of the pubes, the occipital bone of the child's head may be felt a little convex, extending about an inch and a half or a little more backwards; and the lambdoidal ſutures on each ſide of it approaching each other till they meet, and form the apex of an angle towards the center of the os vaginæ.

From this apex, the ſaggital ſuture may be felt to run obliquely backwards to one ſide of the perinæum; and if a finger is paſſed along it, betwixt the head and perinæum, the fontanel may be felt there a little ſoft and depreſſed.

When the head has deſcended lower, the hairy ſculp begins to wrinkle (this ſometimes happens ſooner) and the ſinciput or parietal bones ride a little over each other at the ſaggital ſuture, and riſe up into an arch or prominency, between the angle of the occipital bone and fontanel; the apex of which arch preſenting now in the center of the os vaginæ.

The crown of the head.

By this arch or prominent part, I mean the crown of the head.

Soon after, the crown advances by each pain; the face turns more directly to the perinæum, and puſhes it out; the os vaginæ gives way conſiderably; and the labia pudendi become diſtended; but the vertex remains ſtill at the inſide of the pubes, a little to one ſide of the ſymphyſes; and the angle of the occipital bone near the ſame diſtance from the pubes as it was before.

By a few pains more the head advances; the os vaginæ widens; the labia and perinæum are greatly diſtended; the crown keeps yet in the center of the orifice; the vertex comes now to the lower edge of the ſymphyſes; and the forehead to the perinæum. Hence, the wideſt part of the head extending now from pubes to perinæum, the latter is thereby greatly ſtretched, and puſhed out: but during the intervals of the pains (eſpecially if it is the firſt labour) the head uſually retracts, which gives a little reſpite to the parts, and allows them time for a gradual dilatation. The woman now vomits, and a little blood

is ſometimes diſcharged from the os vaginæ; ſhe bends her body forwards during each pain, and regains vigour; ſhe breaths quick, the thighs tremble, the eyes ſparkle, and ſhe looks wiſhfully on thoſe around her.

A very few pains now brings the vertex paſt the lower edge of the ſymphyſes; at which inſtant, the perinæum is puſhed greatly out, and ſlips back along the face; the vertex moves forwards towards the mons veneris; the head comes ſoon without the labia; and by two or three pains more, the whole body comes forth.

§. IV. The birth of the child is uſually ſucceeded by a guſh of liquor amnii, and then by ſome clots of blood. In the ſpace of ten or fifteen minutes, the patient commonly feels a little forcing pain, or uneaſineſs in the uterus; ſoon after which, the placenta deſcends into the pelvis, and then preſents at the os tincæ, a little obliquely, that is, with one edge a little downwards; at other times, eſpecially if aſſiſted, nearly tranſverſely, the inſide turning outwards; ſo that when it has arrived in the vagina, it is entirely inverted, and changed into a globular form, the root of the funis being near to the center of that part of it which advances firſt. As it comes through the vagina, it is preceded by clots of blood; and a few pains more having brought it forth, the membranes being alſo inverted, follow it in a conic form; for the aperture which was made when the waters broke, and through which the child paſſed, is now the part which comes laſt. The expulſion of the placenta.

Although moſt or all of the above circumſtances commonly attend a very natural birth, eſpecially if it be the firſt or ſecond; yet, it muſt be owned, that they are often ſo extremely various as to render it almoſt impoſſible to aſcertain them by way of an example. For ſome births may have even more than thoſe enumerated; and, on the other hand, the greater part have not ſo many, eſpecially after the ſecond labour.

The

The time of compleating ſuch deliveries is likewiſe extremely various; for ſome take more than twelve hours, and others (by the patients own account) not ſo much as two, even from the firſt attack of pains.

Nay, in not a few caſes, the operator may, when he is called, find the os uteri not opened above the breadth of half a crown; the membranes forming but a very little tumor; the child ſwimming in the liquor amnii; and ſo high above the brim of the pelvis, as by the touch not to be felt, and yet the delivery be compleated naturally in leſs time than two hours. In others, the head of the child will halt above the brim of the pelvis for ſeveral hours after the orifices are conſiderably opened; then all of a ſudden it will enter the ſuperior ſtrait, and by two or three pains come forth.

But then it muſt be conſidered, that thoſe women have generally born ſeveral children; that they have pretty large pelviſes; that they have a large quantity of the liquor amnii; and that their orifices are lax, conſequently very yielding; ſo that when the waters begin to flow, and the head has entered the ſuperior ſtrait, a few pains only are required to bring forth the child. It muſt here be obſerved, however, that ſuch a haſty paſſage through the pelvis ſeldom takes place till the liquor amnii has been ſo conſiderably evacuated, that the uterus can apply its force upon the child itſelf.

Subſequent ſymptoms.

§. V. Parturition being finiſhed, the uterus recovers itſelf with amazing ſpeed; nevertheleſs, before the orifices on its inner ſurface can poſſibly contract, about half a pint of blood or more, doth commonly flow; and the coagulable lymph forms ſome of it into cakes alſo in the cavities of the uterus and vagina. The womb ſtill continuing its contractile and expulſive power, the diameters of its veſſels are gradually leſſened; the coagulations are diſmiſſed from its cavity, and then from the vagina; ſo that in twenty or thirty hours, they commonly

monly being totally diſcharged; its bulk now is ſeldom larger than what it was in the fourth month of pregnancy.—In a few hours after parturition, the patient perſpires freely, the ſkin becomes moiſt, and the pulſe quiet.—Between twenty-ſix and thirty-two, generally about twenty-eight hours, the milk begins to flow into the breaſts; at which time the lochia ( or uterine flux ) begin to leſſen. Her appetite, at this time, is uſually good; and ſhe makes urine freely. About the thirty-ſixth, or thirty-eighth hour, the breaſts are pretty full; the lochia are pale in colour, and leſs in quantity; and ſhe ſweats gently over the whole body.—In forty-ſix or forty-eight hours, her appetite is ſtill good; the ſweat continues; ſhe makes urine naturally, but has no ſtools. The breaſts grow ſtill fuller; and the lochia now changed ſo much in the colour as not to be red.—At the ſixtieth hour ſhe ſtill perſpires freely; the breaſts are very turgid; the pulſe begins to riſe; and the lochia continue pale, and little in quantity. Some about this time have a natural ſtool or two, but the generality are coſtive for ſeveral days longer.—At the fourth day ſhe ſtill ſweats; is thirſty; her pulſe is quicker and fuller; her head aches; the breaſts continue turgid; the lochia are pale, and ſmall in quantity; and her appetite fails.—On the fifth day the breaſts begin to ſoften; the lochia return, and change to a reddiſh colour; the ſkin continues moiſt; and the head and pulſe become eaſier.—On the ſixth day ſhe has no ſweat, but the ſkin is a little moiſt; the head is very eaſy, and the pulſe quiet; her appetite recovers, and ſhe has no thirſt; the breaſts are leſſened; the lochia are now pretty copious, and of a good red colour.—At the ſeventh or eighth day the breaſts are eaſy; the lochia begin again to diminiſh, and to change from the red to a pale colour, and by the twelfth or fourteenth they commonly go off; ſome indeed, have them continue longer, others have them ceaſe in leſs than a week; and then have them copiouſly at the month's end; yet all theſe recover health equally well.

## CHAP. III.

### OF THE ASSISTANCE REQUIRED IN NATURAL PARTURITION, AND DURING THE MONTH OF CHILD-BED.

WHEN the man-midwife is called to a patient, who believes herſelf to be in labour, he ſhould examine into the caſe (eſpecially by the touch) without delay; for it often happens, that he may be ſent for more than once before the labour is begun: therefore, if a right judgement is not formed at firſt, he can neither give relief, if the pains are ſpurious, nor proper orders, if labour is begun. Beſides, if it ſhould happen not to be labour, and he, waiting in ignorance, permit the pains to afflict her many hours, and then to go off without aſſiſtance, as ſometimes will happen when the woman is worn out with fatigue, he thereby will expoſe himſelf to be cenſured for unſkilfulneſs.

When it is known that the pains are ſpurious, the patient may be relieved by the method recommended in Part II. Chap. IV.

But if it be real labour, the nurſe muſt have orders to get every thing ready which relates to her office *; and then he muſt attend the patient.

When the alvine tube has not been relieved at the beginning of the labour, the rectum muſt be emptied by an emollient enema, before the child's head comes low in the pelvis; for this will help to facilitate the birth, and prevent alſo ſome other inconveniencies; which, without ſuch precaution, commonly enſue.

* This office is ſo well explained in my little tract entitled Friendly Cautions to the Heads of Families, and to Nurſes, &c. that it is neceſſary for every man-midwife, as well as nurſe to read it.

If

If ſhe has ſlept badly for ſome time paſt, reſt and quietneſs muſt now be enjoined; ſhe muſt not be heated with ſtrong liquors, or forcing medicines; but duly ſupplied with cooling or refreſhing diet, eſpecially of the liquid kind, as tea, panada, caudle or broths, &c.

If refreſhing ſleeps have preceded, ſhe may then be permitted to lie, ſtand, walk, or ſit, as ſhe likes beſt, and be entertained with a cheerful friend or two; but ſhe muſt never be fatigued with much company.

Till the child's head comes low in the pelvis, and the pains grow urgent, the operator has little more to do, than to enquire, at proper times, into the progreſs of the birth, leaving always the patient as much to herſelf as the nature of the caſe will admit, leſt his preſence ſhould incommode her.

In this manner ſhe may go on till the amnion-tumor is come near the os vaginæ; and the os uteri has deſcended low, and is opened near three inches in diameter; the child's head alſo bearing perceptibly upon it during each pain; at which time, if the pains are ſtrong, and return every three or four minutes, ſhe muſt then be placed (the bed being firſt prepared as directed in the little book quoted, Chap. II. §. IV. and V.) in the following poſition, namely;

The poſition of natural parturition.

On the left ſide obliquely acroſs the bed, with the head and ſhoulders a little raiſed, and the knees brought forwards, ſo that the thighs and trunk make a right angle. One end of a long cloth being fixed to the foot of the bedſtead; the other end will ſerve her to hold by during each pain: at which time if the feet are placed againſt the poſt of the ſide where the operator is ſitting, ſhe may apply her ſtrength with good advantage: and, being properly covered, may aſſiſt herſelf without the inconveniency of women's ſitting round and holding her, as was formerly the cuſtom, whereby much miſchief has been done, by over heating the patient.

Theſe

Theſe things being obſerved, it will be needful now to anoint the os uteri, the vagina and its orifice, the labia pudendi, and the the perinæum, in a proper manner, with ſome agreeable emollient unguent; and to repeat the ſame frequently.

How and when to break the waters.

The amnion-tumor being now arrived at, or within the os vaginæ, the os uteri deſcended below the middle of the pelvis, and well opened; the operator may endeavour to perforate the membranes, by preſſing the end of his finger againſt the tumor, or by rubbing it betwixt the end of his finger and the child's head, during the time of a pain; by which means they uſually break, and the liquor amnii flows. But if they are ſo very ſtrong as not to break by this method (as ſometimes happen) the end of a probe, catheter, or quill, will readily do it.

In the firſt and ſecond labours, he ſhould never break the membranes till they are at, or without the os vaginæ, the os uteri being largely opened at the ſame time. When they are broken, the pains, as has been obſerved in the preceding chapter, ſometimes ſlacken about the ſpace of half an hour, during which time the liquor amnii runs off to about the quantity of a pint; in thoſe who have had ſeveral children ſometimes more. By this diſcharge of liquor amnii, the os vaginæ and labia pudendi are lubricated and ſoftened; and the uterus having now its diſtention taken off, in proportion to the quantity diſcharged, contracts with greater force upon the child, by which the latter is driven forwards on the os uteri, and makes it give way ſo faſt, that by a few pains it is perfectly dilated; the head fills up the bottom of the pelvis, and the crown preſents in the os vaginæ.

How to conduct the head through the os vaginæ.

Now the operator muſt attend, and take as much care as poſſible, leſt the os vaginæ and the perinæum be over-ſtretched.

The head uſually halts here, ſeveral pains; during which time, the parts again muſt be well anointed; and as it comes through the orifice,

orifice, and puſhes that, together with the perinæum, violently out; he muſt ſupport them in manner following:

The patient muſt bend herſelf more forwards than ſhe did before; during which time, the operator muſt place the anterior edge of each hand, againſt each lateral edge of the os vaginæ, with the palms towards that part of the head which comes forth, and each thumb on each ſide of the anus, and poſterior part of the perinæum; or the whole of the latter, and the anus being covered with a cloth, he may then ſupport the parts of the woman, (not counteracting the pains, and equal extenſion of thoſe parts, as ſeem to be implied by the directions of ſome teachers) but till the child's vertex gets paſt the lower edge of the pubis; and as it advances, the head muſt be kept forwards, that is towards the pubes, by preſſing gently with his thumbs upon the poſterior part of the perinæum; ſuſtaining, at the ſame time, the labia and the orifice with the anterior edges of his fingers.

When the forehead has thus got to the poſterior edge of the os vaginæ, he muſt ſlip the perinæum gently back over the face, and keep the head forwards, towards the outſide of the pubes, at the ſame time; upon which it will come entirely without the orifice.

How to bring the Body.

He may now wait for a pain, and as it approaches, place a hand on each ſide of the child's head, with the fingers under the chin, and thumbs on the occiput; then extract cautiouſly as it comes along.

At this inſtant the birth is ſometimes detained awhile by the broadeſt part of the ſhoulders not readily turning ſo as to correſpond with the wideſt dimenſions of the pelvis. Although ſome ſuch caſes had occur'd to me before I firſt wrote; yet, I muſt confeſs that no particular attention was paid by me to them, till I read Mr. White's obſervations on natural births, in his Treatiſe pages 88, 89, 90. When I have met with any ſuch ſince, and found the mother's efforts not effectual, in molding as it were, moving round, and propelling the child's ſhoulders, as are uſually done in about the ſpace of ten minutes, I have paſſed a finger or two along that ſide of the neck, which I felt moſt convenient,

till it arrived to ſuch ſhoulder as ſeemed to bear hardeſt againſt the mother, and, by ſliding that part a little aſide, towards the wideſt dimenſions of the pelvis, I have always found the difficulty removed.

As the child's body comes forth, it muſt be curved or bent forwards. Whether the anterior ſide is towards the mother's back or not, it is no matter; care muſt be taken to keep the child's face as near the os vaginæ of the mother as can be ſafely done, till the feet are entirely diſengaged. By this poſition the funis will not be overſtretched, ſhould it even happen to be circumvoluted on the neck.

Mr. White's obſervations beforementioned are as follow:

"I muſt," ſays he, "here take notice of an error in practice, which has not "to my knowledge, been remarked by any writer on this ſubject; it "depends on the following principles;" (ſpeaking of authors,) he ſays, "Thoſe great improvers of the art, conſidering labour as a mecha- "nical operation, have perceived, that the head in its paſſage through "the pelvis muſt alter its direction, according to the width of it in "different places; but here they ſtop ſhort. They have not applied "this rule to the ſhoulders, which not forming ſo great an obſtacle as "the head, are yet certainly capable, by their bulk, of forming a re- "ſiſtance, when offered in a wrong poſition. Now the greateſt breadth "of the head being in a line, which forms a right angle with one "which paſſes through the ſhoulders, it neceſſarily follows, that all "the turns made by the ſhoulders muſt be oppoſite to thoſe of the "head. When the head paſſes with the face towards the ſacrum, and "the hind part to the pubis, the ſhoulders muſt paſs ſideways; and "vice verſa. Accordingly we find that this is the way in which nature "herſelf proceeds, though art has neglected to pay attention to it." But to return,

I have attended many hundred caſes where the funis has been round the neck, in ſome twice, in others compleatly thrice; yet, by obſerving the above method of curving the body, I never found the leaſt neceſſity for dividing the cord till the child was born; nor have I ever obſerved the leaſt hurt or inconvenience to have happened from ſo doing.

When

When the child is born if the neck be entangled, it muſt be quickly diſengaged, by paſſing the funis as often over the head as it was round the neck; and when this is done, it muſt be laid aſide as before; namely with its face towards the mother. How to diſentangle the neck.

A ligature muſt be paſſed round the funis, and tied at the diſtance of two inches from the navel; the funis then muſt be divided by ſciſſars, at about an inch from the ligature, on that ſide of it next the mother. This being done alſo, the child may be wiped dry with a ſoft cloth, then wrapped in the receiver, and given to an aſſiſtant. How to tie and divide the funis.

Now warm linen having been applied properly to the mother, as ſoon as the child is born, leſt cold air ſhould ruſh too ſuddenly into the cavity of the uterus, which, at this time, being very open, the patient thereby might receive injury; he may wait a little for the approach of the placenta.

§. II. Though, in many caſes, the ſecundines may come away by the natural efforts of the mother alone (as obſerved in Chap. II. §. IV.) yet, as the time required for this purpoſe might often be ſo long as to ſubject her to a cold, or to a flooding, or to ſome other inconvenience, an early aſſiſtance becomes neceſſary; not only to prevent ſuch evils, but to relieve her from anxiety, as ſoon as her delivery can be effected with ſafety. How to aſſiſt the expulſion of the placenta.

To this end, about half an hour ſhould be allowed (moſt commonly not above the ſpace of fifteen minutes is required) to permit the uterus to contract by degrees: for, as the capacity of its cavity leſſens, the ſecundines will be gradually and very naturally looſened, and then waſhed off by the flux of blood which at this time muſt iſſue freely, until the orifices of the veſſels are conſiderably contracted, as hath already been obſerved. Now to forward this contraction, &c. and, at the ſame time keep the patient from fainting, let the following method be duly obſerved.

As

By an external compreſſure on the abdomen.

As ſoon as the funis has been tied and divided, and the child is given to an aſſiſtant, the patient muſt be directed to compreſs her abdomen with one or both her hands, as equally as ſhe can, deſcending from the epigaſtric to the umbilical region. When this preſſure has been made about ten minutes, ſhe may fetch a deep breath, retain it, and force down, whilſt the operator aſſiſts as follows:

By tightening the funis.

Having taken hold of the funis, without the labia pudendi, with his left hand (either by rolling it about one finger, or any otherwiſe) he muſt then paſs one or two fingers of the right hand into the vagina, and place their ends againſt the funis, as high as he finds neceſſary, to keep that part of it back in the center of the pelvis (or rather behind it) whilſt, with his other hand, he pulls the other part externally. When this extenſion of the funis has been continued about half a minute, he muſt then deſiſt: but the compreſſure on the abdomen muſt ſtill be continued. In about three or four minutes (or ſooner if a forcing comes on) he muſt extend the funis again; and when this has been repeated once or twice, the compreſſure on the abdomen muſt be made lower; as for inſtance, more directly upon the hypogaſtric region; by which means, the placenta will generally come forth in about ten or fifteen minutes from the birth of the child, unleſs its adheſion be very firm; if it is, the uterus may be felt bulky towards the umbilical region; and therefore, one hand of the operator muſt be applied now, inſtead of the patient's, on the outſide of the abdomen, to make as equal a compreſſure * upon the uterus as he can, and to bring its fundus down at the ſame time towards the pubes; whilſt the funis is tightened below with his other hand. By this method, the expulſive force of the uterus is commonly ſo much

* I have long uſed this method; and have the pleaſure to find the propriety of it confirmed by the practice of Dr. Hunter and Dr. Harvie; the latter of whom appears to have been the firſt who recommended it in his lectures.

aſſiſted

assisted as to make the placenta descend into the pelvis; and then advance through the vagina, especially when it comes obliquely, or with one edge foremost.

How to bring the edge down when it offers transversely.

But when it is very large, or offers transversely, it commonly passes the superior strait with difficulty, for it inverts, and changes into a globular form: therefore, to facilitate its expulsion, the patient must compress the hypogastric region, whilst the operator, with one hand, extends the funis, and passes one or two fingers of the other as high as the placenta, to bring down a part of its edge; this being done, it will soon come wholly forth, by only extending the funis gently forwards from under the pubes.

How to bring the membranes.

The placenta now being without the labia pudendi, the spongy chorion must be allowed a few minutes to be cast off from the inner surface of the uterus; then the operator may grasp the membranes with one hand, between the placenta and os vaginæ, and tighten them a little. If they are loose, and come easily forwards, he may proceed till they are extracted: but if they are fixed, he must rest at intervals, and tighten them again gently, as the patient forces down. Very frequently they come perfectly away by these means, at other times the adhesion is so firm, that it is necessary to grasp them at the inner orifice, and wait awhile, making them now and then only a little tense, as the patient forces down; and then, in a short time, they generally come perfectly away.

If these cautions are not observed, but the secundines brought away precipitately, more or less of the spongy chorion must be left behind, occasioning (as I have reason to believe) a fever; a great uneasiness in the region of the pelvis; and an extremely fœtid discharge from the uterus, by the irritation and putrefaction: for I have been called to cases, several days after the birth, where the placenta having been too hastily brought away, the greatest part of the membranes have been

left behind; nay, part of them now have been hanging out of the os vaginæ, ſmelling extremely offenſive, the woman in great pain, and the fever appearing to have putrid ſymptoms.

It muſt be owned however, that in ſome caſes where the chorion adheres, it is ſomehow ſo brittle in itſelf, as to ſeparate from the placenta, though little or no force has been applied by the operator; and yet, when it has remained in the uterus almoſt a week (ſometimes without any bad ſymptoms) it will then be expelled by nature alone.

But as this membrane is not always ſo brittle, nor its expulſion (if left behind) produced ſo favourably, it is beſt therefore to bring it away very cautiouſly at firſt. I ſay cautiouſly, for if it be ſuddenly ſtripped from the uterus, the latter perhaps may be more injured thereby, than if it had ſuſtained ſo ſudden a ſeparation from the placenta itſelf; and therefore, an inflammation, with its conſequent train of evils, may thereby be occaſioned.

The above method of bringing away the ſecundines, is generally effectual in compleating a ſafe delivery: but as there are caſes which happen, even ſometimes after the birth of the child hath been very natural and ſpeedy, that are attended with much more difficulty than thoſe above-mentioned; I ſhall treat of them here; they are three, viz. firſt, a flooding; ſecondly, a firmer adheſion of the placenta to the uterus, than what is moſt natural or uſual at this time; and thirdly, a particular conſtriction of the uterus itſelf. On each of theſe, I ſhall beg leave to make ſome remarks, and then deſcribe ſuch means of help as I have found to be the ſafeſt.

Firſt then, with reſpect to flooding, I would have the operator conſider, that ſome women who are very plethoric, eſpecially after their circulation hath been accelerated by the labour, have a pretty copious diſcharge of blood between the birth of the child and expulſion of the ſecundines, which is rather beneficial than otherwiſe. He muſt

muſt alſo remember that the approach of the placenta (as hath been obſerved in Chap. II. §. IV.) is often preceded by ſome clots of blood; ſo that when the compreſſure is made, as above-mentioned, and he finds that the placenta advances, though but very ſlowly, yet he may reſt ſatisfied, and deliver in the way juſt directed: but if the hæmorrhage is violent, without ſigns of the placenta's advancing, the uterus remaining bulky above the pubes, or higher, notwithſtanding that a proper compreſſure hath been made; the pulſe being conſiderably ſunk, and the patient beginning to be faint, he muſt then aſſiſt by an introduction of the hand, as ſhall be directed hereafter; and which (to me) ſeems the more neceſſary to be attempted early, as in ſeveral caſes where I have been obliged to do it on account of the flooding, I have found a part of the placenta detached, and yet another part, nay, often the greateſt part of it, adhering ſo firmly to the uterus as to feel like one.

How to aſſiſt when the placenta doth not duly ſeparate from the uterus.

Secondly, when the uterus doth not ſhed the placenta in an hour or two after the birth of the child, notwithſtanding that ſuch aſſiſtance as the above hath been given; then (in my humble opinion) the moſt eligible way to compleat the delivery, is by an introduction of the hand. For, allowing that the ſecundines will be caſt off and expelled from the uterus by the force of nature (as hath been obſerved by ſome gentlemen who have had opportunities to ſee the extent of nature this way) yet, ſeeing one, two, three, or even more days may ſometimes be ſpent before this event may happen, ſhould a flooding or any other illneſs ſupervene in this time; it is not a clear caſe (with me however) whether the uterus, after this delay, will not be more ſuſceptible of injury; and the operation alſo, be attended with more difficulty than if it had been done at firſt: and beſides, how will the operator be acquitted of blame?

But what inclines me moſt to the giving of ſuch early aſſiſtance, ariſes from long experience; for in women of all habits of body, I have met with the adheſion ſeemingly ſo firm, as if both uterus and placenta had been but one viſcus; and yet, by making the ſeparation as ſhall be directed hereafter, I do not know any bad conſequences that ever proceeded from it. Nay, I have often obſerved, that ſeveral of thoſe women have had fewer after-pains, and recovered ſooner than many others whoſe ſecundines came naturally away. Nevertheleſs, I will acknowledge, that had I ſooner known the method of aſſiſting by compreſſing the abdomen, I might probably have ſucceeded in ſome of thoſe caſes, without introducing the hand: but to return.

The third caſe, wherein I think an introduction of the hand is required, is when the placenta is detained by a local conſtriction of the uterus, which happens about midway, between its fundus and orifice, or rather a little towards the latter.

This ſtricture may be felt by applying the hand on the outſide of the abdomen, about the upper part of the hypogaſtric, or lower part of the umbilical regions; for there is a tranſverſe ſulcus there, as if the uterus was encompaſſed with a ligature; and when the hand is paſſed up internally, the contracted part of the uterus feels like a round orifice, not broader than half a crown, and is ſometimes very difficult of dilatation. And the hand being paſſed through it, the placenta is ſometimes found looſe, and at other times adhering very firmly to the upper part of the uterus. Sevĕral ſuch contractions of the uterus, as this mentioned, have occurred to me; but, for the ſake of brevity, I ſhall only deſcribe two, viz.

On the twenty-fifth of Auguſt 1765, I was called to a young healthy woman, who was then in the beginning of the eighth month of her firſt pregnancy. During the two preceding days, ſhe had

had been affected with ſlight pains, which now were pretty ſtrong and frequent. The os vaginæ was opened to about the breadth of a crown piece, or rather more. The os uteri was very conſiderably dilated; and both this and the vagina were filled with the amnion-tumor. By this tumor, the perinæum in a little time was puſhed out, and the os vaginæ became dilated gradually during each pain; but neither whilſt the pains were on, nor in the intervals, was there any part of the child to be felt preſenting.

The lower part of the epigaſtric, and upper part of the umbilical regions, were very hard and prominent; but immediately below the navel, that is, cloſe to its under edge, there run a ſulcus entirely acroſs the abdomen; and between this furrow and the pubes, the abdomen felt remarkably ſoft.

As it was the firſt labour, I thought of allowing as much time as the caſe would admit of, in order that the orifices might be well opened. But before I had waited an hour, a diſcharge of blood happened, which ſeeming to proceed from the cavity of the uterus, I deſired the patient to be placed for delivery. This being done, I paſſed my hand gently through the os vaginæ, which was yet a little tight: I then broke the membranes, and although my hand was quickly paſſed through the aperture, yet there flowed the largeſt quantity of liquor amnii that I ever met with in the firſt pregnancy. But what ſurpriſed me more, was this; having paſſed my hand very eaſily through the os uteri, and up above the brim of the pelvis, I felt neither child nor placenta, although the ſpace there ſeemed large enough to have contained them both. Suſpecting now that the uterus was contracted in the middle, or to find it a caſe of a worſe nature, I advanced to the umbilical region, and there felt a round orifice, about the breadth of a crown piece, in the uppermoſt part of that part of the uterus which formed the cavity wherein my hand was. Having found this orifice, I paſſed my hand through it, though not without

without ſome difficulty, for the contraction was pretty ſtrong. Having now reached the child, I very eaſily met with the feet, and brought them down; after which, I finiſhed the delivery in the ordinary way of turning. The placenta followed the child immediately, ſo that the diſcharge of blood, which appeared before the operation was attempted, had moſt probably been occaſioned by its ſeparation.

The child ſeemed lifeleſs about a minute, then opened its mouth, inſpired, ſighed, and cried. It however died in the month: but the mother recovered perfect health in the uſual time. The other caſe was as follows:

On the firſt of July 1766, I was called to a patient who had a pretty copious diſcharge of the liquor amnii, attended with ſome pains, which ſoon went off. The os uteri was high in the pelvis, but ſtill thick, though a little dilated. In this manner ſhe went on, the waters draining off at times; but no part of the child could be felt till the fourth of the ſame month, when the head preſented high in the pelvis, and the os uteri became dilated to about the breadth of half a crown. She now had ſlight pains for five hours; during which time, the birth advanced very little, though the os uteri opened conſiderably; but ſoon afterwards the pains grew ſtrong and frequent; and, in about half an hour, the head and ſhoulders came forth. The reſt of the body followed with ſome difficulty; the child was large, and remarkably long, and the funis was once round the neck. I now extended the cord, at times, for above half an hour; but finding the ſecundines did not advance, I paſſed my hand, and found the uterus violently contracted about midway between the orifice and fundus; and even formed into ſo ſmall a ring, that at firſt I could paſs but two fingers; and although I endeavoured to dilate it gradually, in order to inſinuate the others one by one; yet the ſtricture was ſo firm as to occaſion difficulty in paſſing the hand. However, by perſiſting, I

gained admiſſion with ſafety; and found the placenta, with ſome of the chorion round its edges, adhering to the fundus uteri; I ſeparated theſe adheſions gradually, and then brought away the ſecundines, as ſhall be deſcribed hereafter.

I muſt obſerve, that this was the patient's twelfth child, and that the placentæ of all the preceding ones had come away naturally. I have delivered her ſince; and the birth of the infant was very natural; the placenta did not advance quickly; but, the funis being gently tightened, and a compreſſure being properly made upon the abdomen, the delivery was then compleated.

How the placenta is to be detached from the uterus, and extracted by the hand.

Now what hath been ſaid being rightly underſtood, and the operator having found it neceſſary that an introduction of the hand is to be made for obtaining the after-birth; he muſt take hold of the funis by one hand (either will do) and paſs the other, the nails being cut extremely ſhort, along it till he arrives at the placenta, which frequently will be found adhering to the very fundus, but more commonly towards one ſide, viz. near the orifice of the fallopian tube.

In paſſing up the hand, if there happens to be a contraction of the uterus, as juſt obſerved, it muſt be ſlowly dilated, by the introduction of the fingers firſt, then the thumb, every now and then ſpreading them aſunder, till the whole hand has gained admiſſion; the other hand having been applied on the out ſide of the abdomen, oppoſite the fundus uteri, to keep that down at the ſame time. By this method, I have always overcome the above difficulty, without the leaſt hurt to the patient. When the hand has got through the ſtricture (if there was any) it is to be paſſed along the funis to its root; and from thence (if the operator is yet unexperienced) ſhifted to the edge of the placenta, the higher upon it the better. It however muſt be here obſerved, that as the hand is now for the moſt part on the inſide of the amnion, the foreſaid edge (eſpecially if it adheres firmly) will not always be diſtinguiſhed till it is ſearched for deliberately;

liberately; and then it may be felt between the membranes and inner ſurface of the uterus; though ſometimes the placenta is ſituated ſo as to render this ſomewhat difficult.

The operator having conſidered this, and placed the back of his hand contiguous to the membranes, that is, towards the inner ſurface of the uterus; he muſt now inſinuate the ends of his fingers between this ſurface and the placenta, whilſt a proper compreſſure is made externally. To inſinuate the ends of the fingers between thoſe parts, it is often a little difficult, for they are as it were entangled by the membranes; yet, by keeping them cloſe to the placenta, and now and then curving their points, they will get behind part of it; after which, the ſeparation of the placenta from the uterus will gradually take place, by ſliding the hand gently from ſide to ſide. While this is doing, if the membranes are ſo tough as to remain before the ends of the fingers, it is not the worſe. If they break (as ſometimes happens) he will then feel the inner ſurface of the uterus ſmooth on the outſide of his fingers, and the ſpongy ſubſtance of the placenta a little rough on their inſide. The ſeparation being thus cautiouſly continued, by inſinuating the ends of the fingers every now and then between a freſh part; then ſliding the hand a little from ſide to ſide, till the placenta is wholly detached, he may then take hold of the lower part of it with that hand, and the funis externally by the other; which being done, the whole will come eaſily forth.

In doing this, if any part of the chorion ſticks, or follows not readily, he muſt hold the membranes awhile till the uterus contracts a little more; then, for the moſt part, the ſeparation will be ſafely effected.

It is a good ſign, and a natural one too, when the uterus is felt contracting as the operator brings forth its contents; but when it remains lax, or very open, it denotes that the patient is very weak, and will be in danger of fainting. To guard againſt this, as well as other evils,

evils, the abdomen muſt be immediately compreſſed, and proper linnen applied likewiſe to the os vaginæ, that an ingreſs of cold air may not ſuddenly enſue.

§. III. Delivery being now compleated, the woman muſt be refreſhed with cordial medicine, a glaſs of wine, a cup of caudle, or of broth, not very warm, leſt the lochia become too fluſh. How the mother is to be treated after delivery.

When ſhe has reſted about fifteen minutes, ſhe muſt be dreſſed as quickly as poſſible, and the wet things taken all away.

This may ſeem to ſome perſons too haſty, and ſo it is, in caſe the patient is faint, the uterine flux very copious, and the pulſe low or tremulous.

But if the pulſe is good, and the diſcharge moderate, the ſooner ſhe is laid dry and eaſy the better; for her linnen being wetted by the heat of the labour, &c. ſhe will ſoon become chilly; liable to get cold; unwilling, and indeed more unable to move or to be moved, the longer ſhe remains in this ſituation.

The clean apparel therefore being put on; and the bed prepared as directed in the little book already quoted (viz. directions to nurſes, &c. chap. ii. §. 6. and 7.) She may lay herſelf on her right ſide, and being covered with ſuch a quantity of cloaths as accuſtomed to when in health; ſhe ſhould continue in bed till the fifth day, unleſs the climate or the weather be extremely hot.

After the firſt week (no indiſpoſition forbidding) ſhe may riſe every day, and ſit at firſt about an hour or two, and then longer, as her ſtrength recovers; which, after the twelfth day, will be aſſiſted by lying now and then upon a bed or couch for an hour or ſo, and then ſitting up again. During moſt of this time, but more eſpecially the firſt ſix days of it, her perſpiration ſhould be conſtantly maintained in ſuch a degree as juſt to keep the ſkin a little humid; and care muſt be taken that as little of the ſurface of her body is expoſed to the cold

air as poſſible: for even though toſſing the arms about, and lying with them uncovered, or ſitting up early in the bed, may ſeem but trifling errors, yet much miſchief has been occaſioned by them.

In ſhort, the air in the patient's apartment muſt always be kept as temperate and pure as poſſible, and her quiet never interrupted with much company, nor with any ſudden or violent emotions of the mind whatſoever, through the whole month.

Beſides, it is neceſſary to obſerve, that in a few hours after delivery, the patient muſt endeavour to make water: for ſome women have the ſpincter veſicæ ſo greatly affected with even a very natural birth, as not to be ſenſible when this is required; and therefore, not helping themſelves in a proper time, the bladder becomes ſo much diſtended by the urine, as not to be able to execute its office, till after it has been aſſiſted by the catheter, in the manner as directed in Part II. Chap. III. §. III.

The aliments which are moſt ſuitable for the patient, during the firſt four or five days, are principally the following, namely, caudles, panadas, and broths of chicken, lean mutton, or beef, &c. unleſs ſhe is of a lax or waſhy habit of body, or has a very particular averſion to liquid diet. If this be the caſe, and ſhe is deſirous of ſolid food, ſhe may have it in moderation: but if ſhe has not an appetite for it, or is feveriſh, or if ſhe is of a ſtrong or plethoric conſtitution, no meat ſhould ever be eat before the fourth day; and then but very ſparingly till the milk fever is off, and the body ſufficiently opened.

Whilſt ſhe is thirſty, ſhe may drink freely of any ſort of tea, or of barley water; for theſe will not only help to maintain duly the humidity on the ſkin, but the fluidity of the milk, &c.

The medicines which are moſt commonly uſed at this time, are, ſpermaceti, oleum amygdalinum dulce, tinctura thebaica, ſyrupus balſamicus, confectiones cardiaca & alkermes; pulvis contrayervæ compoſitus, ſpiritus mindereri, aquæ caſtorei et pulegii, &c.

Moſt

Moſt women being coſtive after delivery, require relief about the fourth day; and here, an enema, eſpecially for the firſt time, anſwers very well. But if it is very diſagreeable to the patient (as ſometimes happens) then either of the following aperients, or a ſimilar one, may be given directly, and repeated as occaſion requires.

I ℞ Pulveris jalapii grana duodecim,
Rhei grana ſeptem,
Salis nitri ſemi-ſcrupulum,
Aquæ alexiteriæ ſimplicis ſeſcunciam,
Tincturæ rhabarbari ſpirituoſæ,
Syrupi ſimplicis, ſingulorum drachmas duas;
Miſceantur, et fiat hauſtus mane ſumendus.

Vel,

II ℞ Pulveris rhei drachmas duas,
Electarii lenetivi uncias duas,
Olei amygdalini dulcis unciam unam,
Carui guttas decem,
Syrupi roſarum ſolutivi quantum ſufficit;
Miſceantur, et fiat electarium dequo capiat quantitatem nucis moſchatæ nocte maneque donec alvus ſatis ſolvatur.

If theſe medicines do not operate according to expectation, which not uncommonly happens, from an accumulation of indurated fœces lodged in the rectum; the difficulty then is beſt removed by glyſters, though, for the moſt part, the following pills will anſwer the purpoſe.

III ℞ Extracti cathartici
grana quinque et viginti ;
Fiant pilulæ quinque quarum capiat unam omni
bihorio donec alvus ſemel vel bis reſpondeat.

Though the breaſts become ſo replete with the milk as to be very painful (eſpecially when the infant is not permitted to ſuck; a faſhion truly not only unnatural, but very injurious) yet, recourſe ſhould not be had to repellents; for if the milk retires on a ſudden from the breaſts, or if little or none of it hath been ſecerned to repleniſh them, there is danger not only of a miliary fever; but of the brain, or of the lungs, or indeed of the whole viſcera's being injured. It is therefore beſt for the mother (even ſuppoſing her to be weakly) to ſuckle the child at leaſt during the firſt month; and then, if ſhe determines to wean, ſhe may do it with leſs danger to herſelf. But if either the diſpoſition, or the badneſs of the nipples allows her not to comply with ſuch a natural remedy, ſhe may be greatly relieved by means of glaſſes, which are now contrived ſo well, that ſhe may uſe them herſelf very conveniently, at leaſt till the milk fever is ſubſided; about which time, if not ſooner, the tumefaction of the breaſts moſt commonly aſſwages.

Beſides theſe artificial means of keeping the body open by eccoproctics, and of drawing off the milk by help of glaſſes; the breaſts, but not the nipples, may be covered wholly, at the ſame time, with emplaſtrum commune ſpread upon leather; or they may be embrocated with lavender water, mixed with an equal part of fine olive oil, or oleum amygdalinum dulce; in order to give a little brace to the ſkin, and to preſerve by warmth, &c. the tenuity of the milk, ſo that ſuch complaints may not enſue as are to be treated of in Part IV. Chap. VII.

§. IV.

§. IV. Having conſidered the method of conducting the mother through natural parturition, and the month of lying-in, I ſhall finiſh this chapter with a few directions concerning the infant; this I hope will be the more excuſable, as our utmoſt care is required in behalf of the latter, as well as of the former, not only during the birth, but for ſome time afterwards. Directions concerning the child.

Firſt then, let him be properly waſhed, as ſoon as convenient after the birth. For this purpoſe, there are two lotions in common uſe, either of which does very well. One is made of beer and butter; and the other of wine and water, with a little brandy and oil; or inſtead of the oil, ſome pomatum may be added.

When he is well cleaned and dried, he may be placed on his back, with a flannel band ſixteen inches long and four broad, acroſs beneath him; and then let a compreſs of ſoft linnen, ſeven inches long and three broad, twice doubled, with a round hole in the center, about three inches from one end, be applied to the umbilicus in the following manner: paſs the funis through the hole; lay the ſhorteſt end of the compreſs upwards, along the abdomen, with the funis upon it; reflect the longeſt end over the funis, and bring the ends of the band acroſs over all; then pin them equally, and moderately tight; in doing this, there muſt be neither wrinkles nor hems, &c. to give the leaſt uneaſineſs to the child. And moreover, let this be moſt carefully obſerved, viz. to apply the whole dreſs always very looſe, and as ſmoothly as poſſible.

Notwithſtanding it is near twenty years ſince ſome very uſeful rules, with reſpect to dreſs, &c. were communicated to the public by Dr. Cadogan, and favourably received by the moſt ſenſible part of it; yet there is reaſon to fear, that many children, even at this time, are abſolutely killed by the old and prepoſterous cuſtom of tight apparel: for if you examine, you will find that the head is bound faſt with what is called a biggin; and made to incline unnaturally for-

wards

forwards, with what is called the long-ſtay; the cap is tied ſo tight below the chin, as to obſtruct the circulation of the blood through the jugular veſſels; the body ſwathed ſo very ſtrictly, as to retard the natural motions of the thorax; and the roller applied cloſe to the axillæ, and the arms pinned down, ſo that the reflux of the blood from the hands, &c. is obſtructed! What is the conſequence? Is it not commonly ſaid that the infant died ſuddenly? Or if it ſurvives, is not the report which is given you by the nurſe very commonly as follows:

The child has fits or inward convulſions; it pines and cries often; it is now and then black in the face; and its hands, and ſometimes the feet ſwell, and appear of a blackiſh colour. Nay, if ſhe is honeſt, ſhe perhaps will tell you, that to cure the fits ſhe has given ſome juice of rue, a little brandy, or anniſeed water, &c. in the victuals; and if the pining and crying have been taken to ariſe from the child's longing for ſomething, a piece of fat pig may, in all probability, have been given alſo. Such circumſtances as theſe too commonly occur; at leaſt I have reaſon to ſay ſo; and moreover, that having (not without indignation) cauſed this pernicious dreſs to be either looſened or taken away, I have often had the pleaſure to ſee the complaints removed, and conſequently the child become eaſy before I left the room.

There is another error with reſpect to dreſs, which rather prevails at preſent, for it is a cuſtom with many to cloath the body very thick, but allow neither ſtockings nor ſhoes, &c. even when the infant is carried abroad in the coldeſt weather. This method muſt make the child faint in hot weather, by over-heating its body; and, in the coldeſt, it cannot but check, if not entirely obſtruct the circulation of the fluids in many of the capillary veſſels of the extremities; whereby the natural increaſe or expanſion of theſe veſſels muſt be greatly retarded, inſtead of being properly cheriſhed as they ought to be at this time.

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As with moſt other habits, ſo with this, it is always beſt to keep as nearly as we can to the medium betwixt extremes.

Therefore, whilſt the weather is warm, the child's body ſhould be thinly cloathed; that is, never ſo thickly as to cauſe ſweat. Nor is there any neceſſity of either ſtockings or ſhoes. But when the weather is cold, the body ſhould be covered a little thicker on that account; and the extremities ſo much only, as to prevent the ſkins being diſcoloured with the coldneſs of the air.

A nurſe ought to uſe both her arms alike; for if ſhe carries the infant on one, as for inſtance, on the right more than upon the left, his ribs and ſpine may be diſtorted; nay, moſt probably his right ſhoulder will bulge out; and vice verſa.

When the child can walk, he may have ſhoes to keep his feet from being hurt; but there is not ſo much need of ſtockings, ſeeing thin cloathing at this time, even during the coldeſt weather, is generally ſalutary.

Ablutions, with water every day from the birth, and immerſions of the whole body after the ſecond or third month, are excellent; but free country air (the purer the better) is abſolutely neceſſary.

With reſpect to aliments, the milk of the mother is preferable to all, for the firſt ſix months at leaſt; but if this cannot be had, the milk of a healthy woman ſhould be uſed inſtead of it.

Though women of very different ages and conſtitutions, may ſometimes make better nurſes than expected; nevertheleſs, the following particulars are to be regarded, viz. An age not leſs than eighteen, nor more than thirty; a complexion fair, and conſtitution healthy; teeth perfect, appetite good, breaſts full, nipples of a proper ſize, milk not above three months old; and an equable and cheerful diſpoſition of mind, are endowments eſſential for a nurſe. But red hair, fœtid breath, or either a ſcrophulous or a ſcorbutic habit of body,

or the menſtrua, during the time of ſuckling, are all exceptionable.

Many people think that a child's puking after ſuckling denotes its thriving: ſome children may throw up a part of their aliments, and yet do very well; but I cannot take the latter to have any dependency upon the former. I think that ſuch a regurgitation, may more reaſonably be ſuppoſed to proceed from the ſtomach's being overloaded; and that if the child is permitted (or compelled, as too often is the caſe) to take more of this, or of any other aliment than can be properly digeſted, the chyle will become ſo much contaminated as to irritate, if not inflame the ſtomach and inteſtines; ſo that a diarrhœa, or what is called the watery gripes; nay, even death itſelf, may enſue.

For this reaſon, I would never have ſo much taken at once as to cauſe vomitings, or even any uneaſineſs at the ſtomach, if it poſſibly can be avoided.

The aliments, beſides the milk of the mother or that of a nurſe, which have ſeemed to me to agree beſt with children, are theſe following:

Take of new cows milk and oatmeal tea, or inſtead of the latter, barley water, each a quarter of a pint; roll or fine bread (home baked the beſt) a ſufficient quantity to make it of a proper thickneſs.

Boil it a little, and then add of double refined ſugar enough to make it of an agreeable ſweetneſs.

Very fine flour may ſometimes be uſed inſtead of bread; but then it muſt be boiled longer.

When the milk of the breaſt is not ſufficient for the child, or when he doth not ſuck at all, the above pap may be given as occaſion requires, taking care it be freſh; for if it be warmed a ſecond

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or a third time (the oftener the worſe) it becomes flat, unpleaſant, and very ſoon ſo acid as to endanger the infant.

Water pap, that is, ſuch as is made of bread or biſcuit, and water only, has been long in uſe; and continues ſtill in very high vogue amongſt the vulgar. This pap ſeems not only inſufficient for the child's nutrition, but the bread, eſpecially what is made of bad wheat or flour, having allum mixed with it (ſometimes in no ſmall quantity, by the injudicious and fraudulent baker) ſoon becomes ſo very acid and acrimonious, as to diſorder the bowels moſt violently! Have we not too much reaſon to fear, that the death of many thouſands is occaſioned by this compoſition? I am firmly of opinion that we have; and therefore cannot but heartily wiſh it may for ever be laid aſide.

Beſides the diet above recommended, when the child is about ſix months old, he may with advantage be accuſtomed once a day to the uſe of ſome animal food; as for inſtance, two or three ſpoonfuls of weak broth newly prepared; or a little of any white meat well dreſſed, bruiſed, and divided into very ſmall parts; then mixed with the crumbs of bread, and moiſtened or made ſoft with broth, tea or water, ſo that the child may ſwallow it with ſafety.

With reſpect to medicines, the mother's milk is generally the beſt at firſt. Sometimes, indeed, the meconium is ſo viſcid, as to occaſion great uneaſineſs and pain, before the inteſtines are perfectly relieved. In this caſe, the following powder is uſually ſucceſsful.

℞ Magneſiæ albæ grana quatuor,
Pulveris rhei grana duo;
Miſce, fiat pulvis, ſemel vel bis in ſeptimana
ſumendus donec alvus ſatis ſolvatur.

At any time when the inteſtines become foul, the fœces ſmelling ſour or appearing green, the above powder may be given in ſuch a

quantity as the age may require. If it does not agree with the conſtitution, manna, &c. may be given inſtead of it; and the remaining crudities may be corrected or abſorbed by either the following mixture, or a ſimilar one.

℞ Oculorum cancrorum preparatorum
drachmam unam et dimidiam,
Aquæ fæniculi dulcis uncias tres
—— nucis moſchatæ,
Syrupi ſimplicis,
Singulorum ſemiunciam;
Miſceantur, et fiat mixtura cujus detur cochleare ter quaterve in die, vel pro re nata.

When vitiated humours affect the ſtomach and inteſtines, ſo much as to threaten danger, Mr. Armſtrong's method of giving the antimonial wine, being both ſafe and generally ſucceſsful, may be uſed with the greateſt propriety.

For more information, with reſpect to the management of children, the reader ſhould peruſe the works of thoſe gentlemen who have wrote particularly on the ſubject; eſpecially Dr. Cadogan's eſſay on the nurſing of children; Mr. George Armſtrong's eſſay on the diſeaſes moſt fatal to infants; and a book, intituled, a comparative view of the ſtate and faculties of man, with thoſe of the animal world; the latter is ſaid to have been written by an eminent profeſſor of phyſic. However, be that as it may, there is ſo much ſaid to the purpoſe in the firſt ſection of it, that I could wiſh not only every phyſical perſon, but every parent alſo, would read it.

CHAP.

## CHAP. IV.

### OF THE DELIVERY COMMONLY KNOWN BY THE NAME OF PRETERNATURAL PARTURITION.

BY this denomination is meant every birth in which the feet come firſt, or whenever the child is to be turned ſo by art, as to be brought in that poſition.

Many centuries, even after the hint was firſt given, elapſed, before this method of delivery could prevail. But ſince Paræus's time, it hath been ſo fully explained by practical authors, as to take place univerſally.

In this chapter we ſhall comprehend not only every bad poſition that may require ſuch method of delivery, but thoſe of the natural kind alſo, which ſometimes muſt be treated in the ſame manner; particularly when the hands preſent with the head; and in caſe of floodings, and of twins, &c.

The operation itſelf is generally the more difficult, the nearer the part which preſents is to the child's vertex, and vice verſa (excepting when one or both hands preſent with the head, or a little before it, as will be taken notice of in its proper place); we therefore ſhall begin with the eaſieſt; namely, when the feet offer; and from thence proceed to the more difficult.

When one or both feet preſent.

Firſt then, when either a hand or foot preſents, it not unuſually deſcends into the vagina before the amnion-tumor breaks. When both hands or both feet preſent, or one of each together, they ſeldom come down ſo early, but remain within the os uteri for ſome time after it is conſiderably opened, and before the liquor amnii is begun to flow: but whether this happens or not, it muſt be the operator's

firſt care to know what part offers to the birth. If he cannot diſtinguiſh a foot from a hand, he had better not proceed: but as it can ſcarce be imagined that he can miſtake in this point, he has little more to do, when one or both feet preſent, than to wait, and take care that the patient be ſupplied with ſuch neceſſaries as directed in Chap. III. §. I. or Chap. VI. §. I. until the orifices open naturally; and the leg or legs advance without the labia. During this time however, it will be neceſſary for the patient to empty the veſica urinaria; and if the rectum is not relieved, an enema ſhould be given; after which ſhe may lie on her ſide in the poſition as for natural delivery, and let the labour go on.

In ſome caſes, where only one leg has come down, and the hips have remained ſo long at the upper ſtrait of the pelvis, as to make me ſuſpect that the woman would undergo a very laborious labour, if left alone to nature: I have, as ſoon as the orifices were open enough, paſſed my hand, and brought down the other leg and thigh. But, in other caſes of this kind, I have found the hips come forth, and the body follow, till the limbs were perfectly diſengaged, without any hurt to mother or child. So that I now prefer this method to the other; and am ſtill more convinced of its propriety, by the opinion of a practitioner much more experienced than I am. But to return; one or both legs being without the labia, if the toes are towards the mother's nates, the pains forcing, the pelvis large, the child ſmall, or even of a middling ſize, the delivery will be ſometimes effected by nature almoſt alone, ſo that very little help need be offered.

How to bring the hips along.

But when the circumſtances are not ſo favourable, the difficulty of bringing the child along, as well as of ſaving it in the birth, is often ſo great as to employ the ſkill of the moſt expert operator. Therefore, when he finds that the hips do not come forth ſo readily as might be expected by the force of the pains, he may place himſelf con-

conveniently in a chair at the bedſide, envelop the legs of the infant with ſoft linnen, and lay hold of them above it; for, by this method, his hand will not be ſo apt to ſlip. He may now extract during the pains, and wait intervals, that the orifices may have time to be gradually dilated. For by this means, the nates will advance to the os vaginæ; and when they are a little without it, if the toes point not backwards, he muſt place the linnen about the thighs, take hold of them above it with both hands, raiſe the body a little in the pelvis, turn it gently round till its anterior ſide is exactly towards the mother's ſacrum; or with a quarter turn more (as Dr. Smellie expreſſes it); which afterwards being reverſed, he may then conclude, that the wideſt parts of the ſhoulders will point directly to thoſe of the ſuperior part of the pelvis; and that the face, having followed the above twiſt, muſt be towards the ilium, or near to the angle of the ſacrum; ſo that the birth cannot be obſtructed now by the chin's hitching on the brim of the pubes.

When to place the body right in the paſſage.

Having extracted again till the ilia are entirely without the labia pudendi, they muſt be enveloped with the linnen, and laid hold of by placing a hand on each of them, with the thumbs towards the ſacrum, and the points of the fingers towards the pubes; ſometimes they may be placed the reverſe, that is, with the thumbs towards the pubes, &c. then the body muſt be drawn forth gently till it halts, which will commonly happen when the ſhoulders are either at, or within the os vaginæ. This laſt advancement muſt be mechanically performed, that is, not in a ſtraight line, but by moving the part which he holds a little from ſide to ſide; yet, keeping the ſpine ſtraight, and but gently extended, leſt it be over-ſtretched. His hold alſo muſt be continued on the hips, for if it be moved higher, it will not only ſlip, but probably the child may be injured by the compreſſure, whether it be made on the abdomen or thorax.

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The funis now muſt be often felt, to know if the pulſations of the arteries ſtand good. When they become ſo feeble as hardly to be felt, he muſt not depend much upon the help of pains, but haſten the delivery; deſiring the patient to force down as much as ſhe can, whilſt he extracts, though ſtill with caution, leſt the ſpine of the back, &c. be hurt. But if the funis happens to lie where the compreſſure, betwixt the walls of the pelvis and the child, is not ſo great as to ſtop the circulation, he may then wait for the aſſiſtance of pains, by the aid of which, the ſhoulders will ſometimes come forth.

How to bring the arms down.

If they do not readily, he muſt paſs his right hand along the hind part of the right ſcapula, till a finger or two gets over the top of it; then move it gently from the pubes towards the poſterior ſide of the pelvis; and bring it a little without the orifice, whilſt the body is extended a little to the left ſide, with his left hand; the fingers now muſt be ſlided from the right ſhoulder along the anterior ſide of the arm, nearly as far as the elbow; bringing the latter, as he paſſes along, towards the hollow of the ſacrum, and then cautiouſly acroſs the neck, center and right ſide of the breaſt, till it comes entirely forth, when it will be readily followed by the cubit.

The body next being gently extended, muſt be moved towards the operator's right hand, whilſt with his left hand he brings down the left ſhoulder, and then the arm, with the elbow, acroſs the neck, center and left ſide of the breaſt, till it comes out from between that part and the mother's perinæum, in an oppoſite direction to the former. By this method, both the arms and the perinæum will be ſaved from injury.

Now he muſt place a hand on each ſide of the neck, and extend it gently whilſt a pain aſſiſts, then reſt, and repeat it as ſoon as another approaches, or ſooner, if the pulſation of the arteries in the funis is very weak, and the pains are not frequent. By this help only, the head will ſometimes deſcend into the pelvis; and when ſo low that

the chin comes againſt the perinæum, the left hand being placed on the breaſt, with the tops of the fingers to the anterior part of the neck, and the right hand on its poſterior part, juſt above the ſhoulders; the ſcapulæ then muſt be moved towards the pubes, the neck extended, and the head brought forth with a ſemicircular turn from the under edge of the ſymphyſes forwards.

But when the pelvis is narrow, or what is the ſame in effect, the head very large, or when the orifices contract very ſuddenly about the neck, or the chin happens to reſt upon the brim of the pelvis, the child is then in danger of being loſt. Nay, it often cannot ſurvive the birth (eſpecially if, previous to all this, its poſition hath required it to have been turned in the uterus; as will be taught hereafter) even although the endeavours of the moſt expert in the art are uſed to ſave it. For ſuppoſing the head correſponds rightly to the pelvis, that is, with the face to one ilium, and the pains are able to force it down, yet the funis is often ſo greatly compreſſed as to ſtop the circulation entirely, and conſequently death muſt enſue.

On the other hand, if he extracts precipitately, the neck will be ſtrained ſo much as to produce evil that way.

Therefore, as ſoon as it is known that the head is fixed, he muſt paſs his hand along the anterior part of the neck in queſt of the chin, which commonly will be found reſting on the brim of the pubes. But whether ſo or not, he muſt place one or two fingers in the mouth, and turn the face towards one of the ilia; then applying the other hand on the hind part of the neck, juſt above the ſhoulders, where his hold will fix. This being done, he muſt now extract with conſiderable force (yet not ſo much as to injure the lower jaw) obſerving at the ſame time, not only to pull in a direct line, at leaſt as nearly as he can, towards the apex of the coccyx, but to move the hand firſt to and fro between the lateral parts of the pelvis, that is, from ilium to ilium, next between pubes and ſacrum, and then preſs it backwards into the hollow of the latter.

By

By theſe directions of action, the thickeſt part of the head will come through the upper ſtrait of the pelvis, upon which a finger or two being ſtill in the mouth, the face muſt be turned firſt backwards into the hollow of the ſacrum, and then downwards to the bottom of the pelvis, whilſt the neck is extended at the ſame time forwards with the other hand. By the laſt movements, the chin will probably be brought to the poſterior ſide of the os vaginæ, and the nape of the neck to the under edge of the pubes.

But whether this hppens or not, the movements muſt be continued now, firſt between pubes and perinæum, and then entirely forwards, and upwards towards the mons veneris. The chin being come without the poſterior ſide of the os vaginæ, the fingers then muſt be taken out of the mouth, and employed in ſlipping that part of the orifice and the perinæum back over the face; whilſt, at the ſame time, the neck is graſped with the other hand, and pulled forwards and upwards, as above directed, by which means the head will come forth. In all theſe endeavours, he muſt wait for pains as much as the nature of the caſe will permit; for if the efforts of the patient coincide with thoſe of the operator, more than double advantage will be gained.

The child being now brought forth, muſt be immediately laid eaſy, the air permitted to come to its noſe and mouth; the funis muſt be diſengaged (if entangled); the mother muſt be covered cloſe; and then the child muſt have time allowed to recover from the fatigue of the birth, as for inſtance, about fifteen minutes, or till the circulation in the veſſels of the funis revives. For in ſuch caſes, although it not uncommonly may ſeem entirely lifeleſs, yet by waiting ſix or eight minutes, ſometimes more, rubbing it now and then with warm cloaths, applying the ſteams of brandy or warm vinegar, &c. to the noſe, and permitting the air to come at the face; the umbilical arteries will begin to pulſate, firſt feebly, then ſtronger and ſtronger; ſoon after which, the child will breath and gradually recover.

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When it has fetched a few breaths, the funis muſt be tied and divided; then the child being given to an aſſiſtant, the ſecundines muſt be extracted. If they come not forth in the natural way, they muſt be brought by the hand, as directed in Chap. III. §. IV.

§. II. When the nates offer, it is ſometimes difficult to diſtinguiſh them from the head, eſpecially whilſt they are high in the pelvis, the amnion-tumor preceding them, and one deſcending a little before the other: but after the membranes are broke, and the nates are advanced near the middle of the pelvis, they are then known by the following marks, namely, they feel ſmooth and fleſhy; their form is not ſo globular as that of the head; and when they are preſſed hard by the point of the finger, they are found to be very firm, and not ſo equal in their convexities as thoſe of the bones of the ſcull. When they preſent together, a ſulcus may be felt running acroſs the apex of that part which preſents; and as they deſcend lower, the external parts of generation become ſo much tumified, by the compreſſion above, as to project conſiderably from this ſulcus: nay, if it is a male, the ſcrotum is often ſwelled very much, and looks livid for ſome days after the birth; but recovers its natural ſtate in about a week. How to aſſiſt when the nates preſent.

Beſides the above ſymptoms, the child being compreſſed in this double poſition, as ſoon as the membranes break, the meconium iſſues forth, ſometimes in very large quantities.

When the pelvis is of an ordinary ſize and form, the natural efforts will commonly bring forth the child in this poſition, without any remarkable difficulty, unleſs it be very large, or the orifices unuſually rigid: if ſo, the birth is always extremely laborious, yet will be effected by the woman's endeavours. In ſome caſes I have brought down the feet; but in moſt caſes of this kind which have occurred to me, the nates have been ſo low in the pelvis before I could be certain it was them, that I have thought it beſt to let the birth go on in its

own way, till the legs were fairly without the os vaginæ. By allowing it to proceed thus, I have never known any hurt befal mother or child. Nevertheleſs, I own, that I had ſtill a notion of paſſing up the hand to bring down the feet, provided the orifices were open enough to admit of it, and the nates diſtinguiſhed before they were deſcended low into the pelvis, till I talked with Dr. Hunter upon this ſubject. He thinks, "That it is much ſafer "both for the mother and child, to let the child come double, than "to bring down the feet. All the diſadvantage accruing to the "mother from ſuch practice, is only a longer and harder labour; "from which, however, ſhe will recover as well as if it had been "more eaſy; and ſhe is ſecured againſt all the misfortunes that might "happen from unnatural violence of introducing a hand and bring-"ing down the feet, an operation which cannot always be done "with perfect ſafety.

"With regard to the child, he thinks this method the only ſecu-"rity of ſaving it. In this, as well as in a natural ſituation, the "getting the head of the child to paſs, is the great difficulty. And "in a natural caſe, when there is real difficulty, the paſſage of the "head, which comes into the world firſt, may ſafely be made the "work of many hours; ſo that the head gradually lengthens, and "grows ſmaller in the ſame proportion.

"But in the other caſe, the head, the part of great difficulty, comes "into the world laſt: and when all but the head is born, the child is "ſo circumſtanced with reſpect to the navel-ſtring, that if it re-"mains any time in that poſition, it will certainly be loſt. Upon "this account, the operator is under a neceſſity of finiſhing that "part of the delivery with ſome diſpatch: and in order to facilitate "this laſt part, it is better that all the parts ſhould have been pre-"viouſly well opened by natural pains."

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This being conſidered, and the child permitted to come in this poſition, till the feet are without the os vaginæ, its body muſt then be placed right in the paſſage ( if it is not ſo already ) and afterwards the delivery may be compleated as directed in the preceding ſection.

§. III. Having now deſcribed how the child may come naturally, or be conducted artificially through the pelvis this way, I ſhall next conſider the means which are to be uſed when the child preſents in ſuch a poſition as to require it to be turned in the uterus, before it can be brought through the pelvis, in the manner as here deſcribed.

How to paſs the hand into the uterus.

Firſt then, whenever the hand is to be paſſed into the cavity of the uterus, the greateſt care muſt be taken to have the nails cut very ſhort and ſmooth; the whole cubit muſt be properly anointed; and the fingers gathered into a conical form, the thumb lying obliquely acroſs the palm of the hand, with its point upon the firſt joint of the ring finger, reckoning downwards. In this form, the hand muſt be glided gently along the vagina, till the ends of the fingers reach the os uteri, into which, the firſt three muſt be inſinuated together. If it is not opened enough to admit them with facility, he muſt not proceed, except in caſes of extreme danger; but wait till it is ſoftened, and opened ſo well by nature as to allow them to enter without much difficulty. When they are received, the thumb muſt be inſinuated next, and then the little finger: after this, by opening them now and then, the whole hand will ſoon be admitted.

As it is paſſed up, it muſt be directed forwards, in courſe of the curvature of the pelvis; and as it aſcends into the cavity of the uterus, he may obſerve the width of the ſuperior ſtrait, as ſhall be directed in Chap. VIII. for if this is leſs than the third dimenſion, there will be great difficulty in bringing the head along, unleſs it be very ſmall indeed.

I had once a caſe of this kind, in which, having meaſured the ſuperior ſtrait of the pelvis with my hand, and the child's head afterwards from ear to ear, I found the dimenſions of the former to be about half an inch leſs than the latter. This, perhaps, may appear a paradox; but whoever conſiders the compreſſibility of the head (as hath been obſerved in Part I. Chap. IV.) will readily comprehend the poſſibility. But to return: whether this is done or not, when he has diſtinguiſhed the part which preſents, and finds it beſt to proceed, he muſt paſs by this part of the child, on any ſide where there is moſt room; and then advance in ſearch of the feet.

In doing this, he muſt obſerve that the palm of the hand, and the points of his fingers are kept cloſe to the child; always taking care to bear as little as poſſible againſt the woman; for by much preſſure, he will not only cauſe pain, but perhaps a laceration of the uterus itſelf! A woeful inſtance of which I once ſaw, as hath been obſerved in Part I. Chap. V. §. VIII. It muſt alſo be carfully obſerved, that in paſſing the hand through the orifices, and along the uterus, ſome pains may be excited, attended with ſtrong contractions; during which, the operator muſt ſtop till all is quiet; for, by acting now, his ſtrength will be waſted, and his endeavours rendered uſeleſs, if not worſe. But when the uterine ſpaſms are off, he may then proceed; for in thoſe intervals, the difficulty of either advancing or turning the child is ſeldom very great, unleſs the patient's conſtitution is robuſt indeed, and the liquor amnii has long been evacuated*.

In the following caſes, the poſition of the patient muſt be ſuppoſed to be the ſame as that in Chap. III. §. I. with only this difference, that the nates muſt be cloſe to the ſide of the bed†.

* I have the pleaſure to ſay, that this practice was approved of by Doctor Hunter, my late valuable friend, who favoured me with his opinion on ſeveral parts of the firſt Edition.

† I find that profeſſor Hamilton, in his out-lines of Midwifery publiſhed laſt year, recommends the placing of the patient on her elbows and knees, which poſition may help to counteract the contraction of the uterus, and the abdominal muſcles alſo, during the operation. But, as I have not ſince, had any caſes fall under my care to require it, I muſt defer ſaying any more at preſent concerning it.

Though

Though it muſt be allowed, that when ſhe lies on her back, the operator may paſs either of his hands with equal facility through the pelvis: nevertheleſs, I muſt confeſs, that in ſome caſes where the contraction of the uterus has been very great, or the child's poſition very untoward, I have not been able to get at the feet till ſhe was turned on her ſide. For which reaſon, as well as to avoid the terrifying of the patient, I prefer the ſide poſition.

This being underſtood, the operator muſt obſerve to paſs his left hand through the pelvis, and if the feet cannot be found by that, he may then uſe the right; by which, for the moſt part, he will gain them. But if he attempts to paſs the right hand firſt, he will probably come directly againſt the anterior part of the cervix uteri, eſpecially if the head preſents. A caſe of this kind having once happened to me, I ſhall relate it here as a caution to the ſtudent.

A patient being ſeized with ſuch a degree of flooding as to require an immediate delivery, I had her placed on her left ſide; the os uteri was dilated above the breadth of a crown piece, and the child's head bearing down upon it; ſo that not ſuſpecting any miſtake in inſinuating my hand, I paſſed the right one into the vagina, where it came directly againſt the head, which felt ſo round and ſmooth, as not to make me think the anterior part of the cervix uteri was ſtill extended over it, till I endeavoured to raiſe it, and not finding it to aſcend as I expected, I then ſearched, and found the orifice ſo far backwards as not to allow this hand to be paſſed conveniently through it; for which reaſon, having withdrawn this hand, I paſſed the left, and finiſhed the delivery. I muſt confeſs I was very uneaſy at firſt, fearing I had hurt the cervix uteri, or the neck of the bladder, &c. by preſſing againſt them in trying to raiſe the head. The woman, however, recovered in the ordinary time, and is very well. But to return: the operator may either ſtoop, ſit, or kneel, as he finds it moſt convenient, whilſt he is engaged in the operation.

Now

How to turn the child in the uterus.

Now, as to the method of turning, I ſhall endeavour to explain this by beginning with ſuch preſentations as are next to that of the nates. But I muſt here acknowledge, that I do not remember to have met with the firſt and ſecond, namely, with either the back, or fore part of the body preſenting. Nevertheleſs, as ſuch caſes have been deſcribed by authors, and as I cannot take upon me to prove that they do not happen, though it is much doubted by ſome of much experience; yet I will deſcribe the method which to me ſeemeth beſt (in caſe they ſhould happen) and of which I can better judge from the many very intricate poſitions I have met with.

When the back preſents.

§. IV. Firſt then, when the back preſents, it may be known by the Vertebral ſpine, ilia, and ſcapulæ; it matters not which part of it is to the birth; the method of aſſiſting is the ſame, as for inſtance:

The operator muſt paſs his hand along the child's ſacrum, round the nates, and up the poſterior ſide of the thighs to the feet, which in this caſe may commonly be found with little trouble, unleſs they are extended towards the face or ears; if they are, he muſt proceed farther, or move the body circularly till they come within reach; this being done, he may bring them down, and finiſh the delivery as in §. I.

When the fore part of the body preſents.

§. V. When the anterior part of the body preſents, the abdomen may be diſtinguiſhed by its ſoftneſs, and by the funis; the breaſt by the firmneſs of the ſternum, the ſulcus running along its middle, and the ribs ſpreading out from each ſide. The neck (though turned ſo much back that the hind part of the head reſts upon the ſhoulders) may be known by its ſudden diminution from the ſize of the latter, as well as by the proximity and hardneſs of the chin. Though this poſition is the worſt that can happen to the child, eſpecially if it is bended backwards till the occiput and heels come nearly together; the ſpine being thereby not only moſt unnaturally ſtrained, but the viſcera

of

of the whole trunk alſo; yet, whatever part preſents it is the ſame; the turning, as I apprehend, cannot be very difficult; and may be done as follows: let the hand be paſſed from the abdomen along the thighs till it arrives at the knees, the fingers then being paſſed round the hams, the legs muſt be gently brought down towards the pelvis, whilſt the head and upper part of the body is moved upwards towards the fundus uteri, in a circular manner, round to the place where the feet came from. If both legs cannot be fetched at the ſame time, he muſt take hold of them one by one, and having got them down into the pelvis, compleat the delivery as directed in §. I.

§. VI. When either of the ſides preſent, they may be known by the edges of the ſcapulæ, the ribs, and the hips. From the anterior edge of the latter, the operator muſt paſs his hand along the fore part of the thighs to the knees, lay hold of the hams, bring down the legs with a gentle twiſt forwards, every now and then letting go the hold, if difficulty ariſes from the contraction of the uterus, and endeavour to untwiſt the body, and to raiſe the head and ſhoulders upwards, moving the body round at the ſame time; by which means, if both the legs come down, it is very well; he muſt proceed, and finiſh the delivery as in §. I.

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But if both cannot be come at, he muſt take hold of the one belonging, not to the ſide which preſents, but to the other, and bring it acroſs the anterior part of the child's body downwards into the pelvis, though with much caution, leſt the hip-joint ſhould happen to be injured. When the leg is come into the vagina, if the toes are not towards the mother's ſacrum, he may paſs his hand again and endeavour to eaſe or untwiſt the body of the child, and to place its anterior ſide towards the mother's poſterior; whereby the hips may come to correſpond with the wideſt part of the pelvis. It muſt be owned, however, that this amendment may not always be practicable.

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If

If, in the attempt, he comes at the other leg, and can bring it down, he is lucky. But if that cannot be done, he muſt withdraw his hand, place ſoft linnen around the leg which is down; and having taken hold of it, wait for the aſſiſtance of pains, and extract gently at thoſe times, turning it a little round with the toes backwards, that the body may preſent as favourably as poſſible to the paſſage. This twiſt muſt be made with very little force, and with the utmoſt caution, leſt hurt enſue. The ilia having, by this aſſiſtance and that of nature, deſcended through the pelvis, and the nates being ſo far advanced without the os vaginæ, that he can bend a finger or two about the groin of the inflected limb, he may then extract, and turn the body right at the ſame time, if it is not ſo already, till the foot comes forth; upon which, both legs being laid hold of, the delivery may be compleated as in §. I.

When one or both hands preſent with the head.

§. VII. When a hand preſents with the head, the child will ſometimes come along in this poſition, without any hurt to itſelf or to the mother; an inſtance of which I lately met with.

In this caſe, when the head had deſcended below the middle of the pelvis, I felt the fingers a little before it; and when it came without the labia, the fingers of the other hand laid cloſe to the ear of that ſide to which they belonged. Though this child was of a middling ſize, yet the labour was not very difficult.

In 1755, being called to a patient who had been in labour a night and part of a day; and finding the os uteri well opened, and the head with a hand before it, preſenting a little within the brim of the pelvis, I puſhed the hand up with mine, and held it above the brim, till a pain coming on, the head filled up the pelvis ſo well as to leave the hand behind; this being done, I deſiſted; in leſs than ten minutes the woman was delivered, and both ſhe and child did very well.

Notwith-

Notwithſtanding this, caſes have happened where I have not been able to keep the hand up, eſpecially when it has once been pretty low in the pelvis; therefore, whenever one preſents, or even both, provided they lie along the ſides of the head, and deſcend not far before it, I think it is beſt to let them come in this poſition; and I am joined by others in the ſame opinion.

When the the arm is prolapſed and the ſhoulder deſcended into the brim of the pelvis.

§. VIII. But when one or both hands precede the head ſo far as to prevent its paſſing through the upper ſtrait of the pelvis; when a hand comes down with any other part except the head, or when it comes by itſelf; an attempt muſt be made to turn the child as ſoon as the orifices will admit the operator's hand, as directed in §. III.

When the liquor amnii hath been long evacuated, the arm quite prolapſed, the ſcapula forced into the brim of the pelvis, by a violent contraction of the uterus above, the delivery is always very difficult. Therefore, before it is attempted, the poſition of the breaſt ſhould be known, that the operator may both paſs his hand along this part, and bring the feet down over it; this direction being the moſt natural way of turning the child. He may, therefore, take notice that the inſide of the thumb, and palm of the preſenting hand, point (moſt commonly) to that ſide where the breaſt is to be found.

When the orifices will allow of the operation, he muſt paſs his hand along the anterior ſide of the prolapſed arm, into the cavity of the uterus, with the palm towards the breaſt and abdomen of the child; obſerving, as he advanceth, to ſlide it a little from ſide to ſide. As he paſſeth it up through the pelvis, he needs not raiſe the arm of the child, eſpecially if it is low; nor is he to raiſe the head and ſhoulders till he brings down the feet.

Without this precaution, the upper part of the uterus may be hurt by forcing the feet or knees, &c. of the child againſt it.

But as thoſe parts are brought down, making thereby room above, the head and ſhoulders will go up, and the arm and hand alſo will conſequently follow, without either hurting the uterus or obſtructing the birth.

This being conſidered, he muſt glide his hand along as above directed, till it gets to the feet; but if theſe cannot be readily come at, he may take hold of the hams; then bring the legs gradually down, either together or ſingly (prefering that which belongs not to the ſame ſide of the prolapſed arm) the firſt acroſs the other, taking as much care as he can that the foot does not preſs hard againſt the uterus as it is brought round. But ſhould this be found very difficult, either by the uterine contraction, or the intricate poſition of the child's body, he muſt advance higher (though the taſk may be great) till he can inſinuate his fingers between their ſoles and the uterus; then having ſeized them, he muſt bring them carefully round till they preſent to the pelvis. The legs next being laid hold of, and brought low, the body muſt be turned by alternately pulling down the feet, then raiſing the head and ſcapula a little upwards, and round at the ſame time. The body at firſt may ſeem to be immoveable; yet, by theſe means, the thighs, and then the nates, will arrive in the pelvis, perhaps ſooner than expected. After this, the delivery is to be finiſhed as in §. I.

When the head preſents wrong.

§. IX. When the head halts on the brim of the pelvis very long, or enters it in a bad poſition, it is ſometimes adviſeable, (as will be mentioned in the ſucceeding chapters) to deliver by turning, but always ſo when either the occiput or an ear preſents; (the latter I believe ſeldom happens). If, in theſe caſes, the liquor amnii has been long evacuated, the feet at the fundus, and the uterus contracted ſtrongly, the delivery will be obtained with great labour.

It is neceſſary therefore to begin deliberately; the hand muſt be paſſed through the pelvis, as in §. III, and along the anterior ſide of the child, as in §. VIII. till, if practicable, it gets to the feet. I ſay, if practicable, for ſometimes the uterus is contracted ſo cloſely about the child, that an operator (allowing him to be ſtrong) may exert his utmoſt efforts, and yet not be able to gain them. Nay, ſometimes he muſt be content with a ham, and often with a foot only.

Having come at one foot (or both if he can) he muſt hold it between his fingers, and bring it round towards the os uteri; then proceed for the other, and bring that down. Although this point may be gained, yet it ſometimes happens, from the untoward poſition of the child, the violent contraction of the uterus, and ſlipperineſs of the legs and feet, that the operator finds the utmoſt difficulty in bringing them down into the pelvis. Nay, I muſt confeſs, that in ſome caſes I have not been able to get them through the os uteri, till I applied a fillet on one ankle.

Though I would not encourage the uſe of inſtruments when hands can do; yet, on ſuch occaſions, I hope it will be allowed, that it is better to aſſiſt with ſomething of this kind, than to ſuffer the mother and child to be loſt. The fillet which I have uſed for this purpoſe, is that which ſhall be taken notice of in Chap. VIII. §. IX. and may be applied in the following manner.

The nooſe being paſſed through the hole B of the embryulcus, the operator muſt place it about the fingers of his hand, and hold it there by the top of the thumb. He muſt now paſs the hand, thus armed, and the crotched end B of the embryulcus, along with it up to the feet, and lay hold of one of them, for he will ſeldom or never be able to fix the nooſe upon both. When he has taken hold of the foot with his hand, and placed the ring B near the middle of the leg, he muſt hold this alſo with the fingers, then with the other hand pull the outer end of the fillet; by which extenſion, the nooſe will be ready to

ſlip off his hand round the ankle of the child; and this movement will be effected by ſhoving the fillet by the ends of the thumb and fingers over the foot, whilſt with his other hand he pulls the external end.

When the nooſe is placed upon the ankle, or rather above it; the ring B of the embryulcus being now as high, the outer end muſt be drawn tight, and rolled about the ſwivel A C D, whereby the fillet will be ſufficiently fixed; this being done, he muſt keep hold of the handle A C D, with one hand, and extract; whilſt with the other he endeavours to turn the body round, and bring down the other leg, if that can be come at. By theſe means, the child will be brought into the paſſage; and then the delivery may be finiſhed as directed in §. I. with only this difference, viz. that if both legs cannot be got down, he may bring the child along in that poſition, taking care that the hip-joint of the limb, which is down, be not hurt in conducting the buttocks through the pelvis.

When the funis preſents.

§. X. When the funis umbilicalis falls down, the child is always in danger of being loſt, eſpecially if either the head or the nates come along with it.

For the pelvis being by theſe filled, the veſſels of the funis will be compreſſed, and conſequently the circulation muſt ſoon ceaſe, viz. in about fifteen or twenty minutes; ſo that in leſs than an hour the child commonly dies.

But when any other part of the body preſents along with it, or when it comes into the pelvis by itſelf, the child is not then in ſuch immediate danger.

When attempts may be made to put up the funis.

If the operator happens to find it beginning to puſh down juſt as the liquor amnii breaks forth, and the head is entering the pelvis, he may paſs up a finger or two to keep it above the brim, till a pain forces in the head. But it muſt be owned, that ſuch an opportunity will

will but ſeldom offer; for when the waters break, which in this caſe are commonly copious, a duplicature of the funis comes ſoon down, and ſometimes protrudes quickly through the os vaginæ.

When the birth may be allowed to proceed in its own way. Plate I.

In this caſe, if the prolapſion of the funis is on one ſide of the pelvis, as for inſtance, towards Z; the pains frequent and forcing, the orifices ſoft and yielding, and the head advancing ſo ſenſibly as to give hopes of a ſpeedy delivery, eſpecially if the woman is of a good ſize, and has born ſeveral children; I think the birth may be allowed to proceed in its own way; for if it happens to be very ſpeedy, the compreſſure on the funis will be ſo ſhort, that there ſeems to be a chance of the child's ſurviving it, and of doing well afterwards: in this opinion I am joined by others.

When the child is to be turned.

But when the pulſation of the arteries in the funis grows very feeble, and the other ſymptoms convince him that a ſpeedy delivery cannot be expected from nature; then, whether the funis preſents with the head, with any other part, or by itſelf, it matters not, he muſt paſs his hand as ſoon as the orifices will permit, and deliver by turning. For by this method, if the child is not already dead, or ſo very weak as not to ſurvive the birth, it may be ſaved; to illuſtrate which, I ſhall only trouble the reader with the following caſe.

In February 1767, I was called to a patient who had beſpoke my attendance; ſhe was of a very ſmall ſize, and rather weakly, but had born ſeveral children. When I ſaw her, the labour was begun; the pains were pretty quick and forcing, the os uteri was opened to about the breadth of half a crown, the amnion tumor protruded through it, and the child's head bore down upon it. Finding the appearances ſo favourable, I waited above an hour; during which time, the pains were very regular, the amnion tumor became very large, and deſcended nearly to the os vaginæ, the os uteri was wider than the breadth of a crown piece, but the head remained ſtill at the brim. Soon after this, the membranes broke, a large quantity of the liquor amnii flowed;

and

and preſently, a pretty large duplicature of the funis prolapſed before the head: I endeavoured to ſlide it up between the head and brim; but finding this would require more force than I durſt apply, without either bruiſing the veſſels of the funis, or altering the poſition of the head, which being a very natural one, I deſiſted. The pulſation in the funis was very ſtrong; but the pains began ſoon to ſlacken. Now I conſidered ſeriouſly with myſelf whether I ſhould wait the event of nature, or deliver by turning. I determined to let the labour take its courſe whilſt the pulſation of the umbilical arteries remained good. Therefore, having waited about an hour, and finding that the pulſe in the funis became ſo feeble as ſcarcely to be felt, the vertex not lower than the middle of the pelvis, and the pains not ſo ſtrong, nor frequent as before, I ſlid my hand along the head, which was raiſed out of the pelvis to make way for it, with leſs difficulty than I expected; then paſſed on, laid hold of the feet, turned, and brought the child with facility: but the placenta adhered ſo firmly, as to oblige me to aſſiſt in the way directed in Chap. III. §. II. The child remained weak for a minute or two, and then revived. The mother recovered health remarkably ſoon; and at this time, namely, Dec. 5th 1767, both ſhe and the infant are in perfect health. But to return; if, when he is called, the head is in the pelvis, and the pulſation in the funis not to be felt, he may then wait, and let nature do the work if ſhe can: when ſhe fails, by the time that the head is deſcended very low in the pelvis, he may then aſſiſt either by the forceps or embryulcus, according to the directions that will be given in Chap. VII. and VIII.

How to act when a leg is entangled by the funis.

Laſtly, I muſt obſerve, that in both this, and in each of the preceding caſes, the operator may ſometimes be a little incommoded by meeting the funis in his way, both as he paſſeth up his hand, and as he bringeth down the feet.

As he aſcends, he need not pay much regard to it; but when he brings the feet down, he muſt take care that it does not entangle the

legs; for if it doth, the remaining part will then be ſo ſhort, that as the body is brought through the pelvis, the funis muſt either break, or the placenta will be torn precipitately from the uterus, the conſequences of which may be dangerous. So ſoon, therefore, as he finds an entanglement, he muſt paſs the funis from between the legs, over a foot, that they may be entirely diſengaged.

§. XI. Leſt what hath been obſerved in Part II. Chap. X. concerning thoſe floodings and convulſions that are to be aſſiſted by the hand, ſhould ſeem not ſufficiently clear to ſome, I ſhall here farther obſerve, that I do not mean the man-midwife ſhould attempt the operation until he is truly convinced of its being abſolutely required. How to act in caſe of floodings.

With reſpect to floodings, he muſt be ſtrictly attentive to the ſtate of the pulſe, and ſtrength of the patient; ſome women bear a conſiderable loſs of blood for ſeveral hours, ſometimes near a day and night; after which, the hœmorrhage leſſens, not uncommonly goes off; returns again in a day or two (if labour does not come on before) though ſeldom ſo fluſh, eſpecially when the child grows very weak or dies; the diſcharge then is pale, ſometimes dark coloured and a little fœtid, the pains come on, ſome livid clots are expelled, the orifices open, the birth is effected in the natural way, and the mother ſurvives.

But when freſh coloured blood pours faſt away, as it were in a continued ſtream, the patient conſequently becoming faint, and the pulſe ſinking and fluttering, he muſt then be on his guard! There is no time to be loſt, eſpecially if this happens at any time after the ſeventh month; the nearer (as obſerved before) to the full reckoning, the more dangerous. Theſe things being conſidered duly, he may perform the operation, which he will find to be an eaſy one, except in ſome caſes where the os uteri happens to be rigid.

Previous to it, a long napkin folded longitudinally, muſt be laid acroſs under the patient. Having paſſed the hand then through the pelvis, as in §. III. and up between the uterus and chorion till it arrives at the child, the membranes muſt be penetrated by the tops of his fingers, and followed by the hand as ſoon as poſſible, to prevent the eſcape of the liquor amnii. Some membranes are ſo extremely tough, as to cauſe difficulty in making the opening, yet this may be effected by puſhing a finger or two towards the cavities formed between the extremities of the child and its body, either about its groins or arm pits. The hand having now paſſed through the membranes into what we may call the cavity of the ovum, he muſt lay hold of the feet, which in this caſe are found very readily, and the child commonly as eaſily turned into any direction, as if it lay in a globe of glaſs almoſt filled with water.

The child now being brought by the feet through the membranes, and down till it fills the pelvis, he muſt then halt a few minutes, not only to prevent the ſudden emiſſion of the liquor amnii, but to allow time for the uterus and parietes of the abdomen to contract gradually, and as equally as their different conſtructions will admit of: becauſe, in ſome women, even after a copious hæmorrhage, the uterus contracts ſo quickly and powerfully, as to cauſe the liquor amnii to ruſh forth with an impetuous force.

In others, eſpecially thoſe whoſe conſtitutions are much debilitated, it remains lax and open for awhile; in both which caſes, if it be haſtily emptied, there will be danger of the patient's falling into faintings, cold ſhiverings, and even of loſing her life.

Theſe events, as I humbly conceive, proceed not only from the loſs of blood, but from other cauſes alſo; as for inſtance, the fluids now being diminiſhed, the natural equilibrium between them and the ſolids will be altered, and the uterus being quickly emptied (whether the ſudden contraction took place or not) the preſſure on the viſcera

of

of the abdomen will be taken off; hence, a greater quantity of blood will flow into the veſſels of thoſe flaccid parts, than can be ſpared from the current maſs, particularly from that part of it which circulates through the brain; and conſequently the nerves will not be duly ſupported in performing their vital functions. And this portion of blood, which has ſo haſtily ruſhed into the abdominal viſcera, not being by the veins of thoſe parts (now enfeebled from the want of the former preſſure, and the natural power of the nerves) returned to the heart in the ordinary or ſtated time; the heart, therefore, muſt act irregularly as well as weakly, ſo that if the veins recover not ſpeedily a force ſufficient to ſupply it with blood, in order to be ſent to the extreme parts of the body, eſpecially the head; not only faintings and rigours, but death muſt enſue.

Now, to guard againſt theſe evils, as ſoon as the body of the child is brought into the pelvis, an aſſiſtant muſt bring one end of the napkin round the abdomen, then lap it over the other, and pin it as tight as the operator thinks neceſſary. The aſſiſtant muſt alſo compreſs the whole abdomen, and tighten the napkin more and more, whilſt the operator brings the contents of the uterus gradually forth, as directed in §. II. After this, the napkin muſt be pinned tight, and the patient kept perfectly quiet for ſeveral hours before ſhe is removed.

When the placenta adheres to the cervix uteri, ſo low as to extend over the os tincæ, it preſents firſt in the birth; and will become detached from the cervix as the orifice is dilated; conſequently a flooding muſt enſue, and continue in proportion to the extent of the ſeparation, the plethora of the mother, the largeneſs of the uterine orifices at this place, and the healthineſs of the child, &c. When the placenta preſents before the child.

If it lies ſo much to one ſide, as at the beginning of the labour to cover only the os tincæ, the mother (but I believe very ſeldom the child) may be ſaved by the help of nature, with little or no incon-

veniency. An inſtance of which, occurred to me in May 1767; I ſhall here relate it.

When I came, I found the head of the child cloſe to the os vaginæ, preceded by the membranes, diſtended with the liquor amnii, and a part of the placenta extending from the pubes, moſtly from one ſide of the ſymphyſis, before part of the head. She had been in labour about three hours; during which time, though the os uteri had been gradually dilating, and the head advancing along the pelvis, yet there had not enſued any conſiderable loſs of blood, for there was not a cloth wet: but whilſt the head came through the os vaginæ, the diſcharge was ſo copious as to wet three, notwithſtanding the time was but very ſhort; for having broken the membranes cloſe to the edge of the placenta, which was now not far from the center of the orifice, the liquor amnii flowed, and by the help of three or four pains the child came forth, immediately attended by the ſecundines.

The child was but of a ſmall ſize; and, judging from circumſtances, had probably died about the beginning of the labour.

As the progreſs of this birth was not diſturbed by art, I think it appears, that a part of the placenta had adhered over the os uteri during the time of pregnancy. But to return:

When a conſiderable part of the placenta covers the orifice, (and the more the orifice is covered, the worſe) the mother as well as the child muſt be ſubjected to great danger, unleſs the latter hath been dead for ſome time; in which caſe (as I apprehend) there will leſs blood circulate through the uterus, than when the child is alive; and the orifices of the uterine veſſels being now diſpoſed to contract alſo, the hæmorrhage will conſequently be leſs.

To aſſiſt properly in ſuch caſes, the ſtrength of the patient, the degree of the flooding, and the progreſs of the birth, muſt be duly attended to. If the pulſe is not very ſmall and quick, the ſtrength not bad, the flooding not violent (which may be gueſſed by the few

cloths that are wet) the pains pretty regular and forcing, the orifices opening, and the child's head advancing, whether the placenta preſents obliquely or quite tranſverſely, the operator may wait, and let nature do the work. But if the ſymptoms are otherwiſe, eſpecially when the flooding is violent, and the patient's ſtrength begins to fail, he muſt then loſe no time, but paſs his hand through the orifices, along between the uterus and that part of the placenta which is ſeparated from it; provided it can be found; if not, he muſt inſinuate the hand as gently as he can between them, taking care to increaſe the ſeparation as little as poſſible, till he has got between the uterus and the chorion; then he muſt penetrate the membranes, lay hold of the child's feet, and finiſh the delivery as above directed.

If, indeed, the placenta is totally diſengaged from the uterus, and come down into the vagina, he may then take it forth, or proceed for the child as he finds it moſt convenient.

When it lies quite acroſs the os uteri, aſſiſtance muſt be offered either by paſſing the hand directly through it at the place which preſents, or as above directed. This practice of penetrating the placenta I have no objection to, provided it can be done without cauſing a total ſeparation, or ſome how increaſing the hæmorrhage. But how this can be done I do not clearly underſtand, for I am apprehenſive that the force required in making ſuch an opening through the placenta, and then through the membranes at this place, muſt bring on a total detachment. But allowing that it does not, yet this perforation being made in the thickeſt part, and ſome of it, if not the principal part, ſtill adhering to the uterus, whilſt a circulation through both is carried on, and united by way of abſorption, as explained in Part I. Chap. VIII. §. III. will not the hæmorrhage now be greatly increaſed? However, as I have not uſed this method, I will leave the point to be decided by future practice.

Of convulsions.

§. XII. In case of convulsions (if things are as shall be stated in Chap. VI. §. VIII.) the operator must insinuate his hand through the orifices as soon as it can be done with safety; then having penetrated the membranes, and laid hold of the child's feet, he must finish the delivery as directed in the preceding sections; unless the child's head is very low in the pelvis: if so, the delivery may be effected by the forceps, as shall be directed in Chapter VII.

Of twins.

§. XIII. Though twins are sometimes born in the natural way, yet as the second (if not the first) requires very often the help of turning, I shall conclude this chapter by some observations and directions concerning them; as for instance,

Two or more ova being fecundated, and conveyed from the ovaria into the cavity of the uterus, by means of the fallopian tubes, as observed in Part I. Chap. VII. §. XII. they there adhere to the uterus, and communicate with it in the same manner as if but one.

In some, their placentæ remain distinct, but, for the most part, they unite, and appear to be but one. Though the part where they join is a little turned inwards, and gives continuation to the chorion, yet each hath its own system of vessels; so that should one child either sicken or die, the other may continue alive. Every child is contained in its own membranes. Such parts of their chorions as come into contact, adhere together; yet, after delivery, may be easily separated. Their vascular systems have sometimes been found to anastomose with each other; but this happens very rarely.

With respect to superfœtation, no case of that kind has yet occurred to me; nevertheless, I must own, that a second conception, in one gestation, seemeth to me very possible.

The ſigns, during pregnancy, which portend twins, have been taken notice of in Part II. Chap. I. §. II. and as to thoſe which attend the birth, they are uſually as follows:

The labour commonly begins untowardly, and continues lingering, though the head of the firſt child may preſent right, and not ſeem ſo large as to fill the pelvis; yet its progreſs through it is not always ſo quick as might be expected. Nay, the vertix remains ſometimes ſo long at the os vaginæ, as to make the operator think of aſſiſting by the forceps; and yet after all, a forcing pain will come on and bring it forth. Its ſize, and the quantity of the liquor amnii, are generally ſo ſmall as not to appear adequate to the preceding bulk of the mother.

The funis is very ſhort, and retracts ſometimes entirely within the vagina, eſpecially when there are more than two children. The placenta commonly remains fixed, and for the moſt part there does not flow ſo much blood after the birth of this child, as when there is but one.

The patient's abdomen externally may be felt hard and prominent; and internally, the membranes, diſtended with the liquor amnii of the next child, may be felt preſenting at the brim of the pelvis. If the head offers, it will ſometimes be diſtinguiſhed early, but moſt commonly not till the pains of the next birth begin to force down a little. During this interval, if the child preſents right, and there appears no immediate danger with reſpect to the mother, the operator may wait, taking care only to ſupport her with proper aliments, to compreſs the upper part of the abdomen with a napkin, and at times to examine the extremity of that part of the funis which belongs to the placenta. Some apply a ligature, but this I think unneceſſary, unleſs the veſſels of the placentæ anaſtomoſe: becauſe, by a computation, I have not obſerved above an ounce diſcharged from the

ſection,

ſection, neither of this, nor of the ſecond, in caſes of three; therefore, I have never had occaſion to uſe it.

Having obſerved theſe particulars, and the progreſs of the birth, he may break the membranes as ſoon as the pains begin to force the head into the pelvis. For as, in this caſe, the orifices are already opened, and the child but ſmall, the delivery will generally be effected ſoon afterwards.

But when the operator has waited a reaſonable time, as for inſtance, about an hour, and the head doth not advance through the pelvis; or ſhould he find, even before this, that the preſentation is wrong, he may paſs his hand and deliver by turning: which, in both caſes, may be done without either danger or difficulty; therefore, with more propriety now than afterwards, even ſuppoſing that the head preſents right; for, by longer delay, the patient may receive cold, and after all be ſubjected to the fatigue of another labour.

How to act in caſe of three or more children.

If there happens to be more than two, they muſt alſo be brought by the feet, one ſoon after the other; the operator obſerving, as each comes through the os vaginæ, to turn the legs and thighs backwards towards the mother's nates; and then to bring down the ſhoulders; and laſtly, the head; taking care, at the ſame time, to move the umbilicus as little as poſſible from the os vaginæ; for, by obſerving this, though the funis is ſo extremely ſhort, it will not be injured.

When they are all brought forth, the ſecundines may be extracted ſlowly and cautiouſly; during which time, the napkin, which was applied round the abdomen, muſt be gradually tightened; without this precaution, the patient will be in danger of fainting.

CHAP.

## CHAP. V.

## OF DIFFICULT PARTURITION.

By difficult parturition, is here to be underſtood every caſe in which the head preſents; and the child, though with the utmoſt labour, muſt either come forth in that poſition by nature alone, or be brought ſo by art. Every birth of this kind, is more or leſs operoſe, according to the circumſtances from which the difficulty ariſes, as will appear by the following claſſes to which we ſhall reduce them; as for inſtance,

§. I. Firſt, from a weakneſs of the mother, either conſtitutional or incidental, viz. a previous diſeaſe, long grief, diſagreeable news, or any thing elſe which gives great or ſudden ſurprize. Cauſes.

Secondly, From miſmanaging a natural labour, as for inſtance, overheating the patient with ſtrong liquors, and hot medicines, fatiguing her with much company, any uneaſy or ill poſition, breaking the membranes prematurely, and hurrying on the labour too ſuddenly; a method too much uſed by female practitioners, even at this day.

Thirdly, From the rigidity of the os uteri and vaginæ, labia pudendi and perinæum, whereby the impelling force of the conatus uterini may be long reſiſted, and conſequently become ineffectual, though the pelvis be neither too ſmall, nor the child's head too large, nor in a wrong poſition.

Fourthly, From the head's being naturally very long, as it muſt turn unweildily in the pelvis; ſee Part I. Chap. IV. §. VI. or from its being naturally very large, and the ſutures firm; for then it will enter the ſuperior

ſtrait

ſtrait with great difficulty; and as it is driven along by the natural effort of the woman, it will undergo ſuch a compreſſure by the walls of the pelvis, as, at laſt, to be ſqueezed out in length equal to the former.

Fifthly, From the head's reſting on the upper edge of the os pubis, till the liquor amnii is diſcharged, and the patient's ſtrength exhauſted.

Sixthly, When the os uteri remains long backwards, and the head having entered the pelvis, bears hard againſt the inſide of the pubes; and as it deſcends, puſhes the anterior part of the cervix uteri, the ſuperior anterior part of the vagina, and the neck of the bladder before it; making a large ſwelling or tumor in the lower anterior part of the vagina.

Seventhly, When the funis umbilicalis is ſo very ſhort, either naturally, or by circumvolutions about the neck, as to make the head retract betwixt each pain; for, as the child makes forwards, there muſt be a ſtrain upon the inſide of the uterus, by means of the funis, (unleſs the placenta is detached) whereby the endeavours of nature are diſturbed, and will be more ſo if the cervix uteri ſhould happen to contract before the ſhoulders.

Eighthly, From the wrong preſentation of the head in the pelvis, that is, when the face is towards the ſymphyſis of the pubes, or a little to one ſide of it, or directly to the angle of the ſacrum, or downwards; the chin being either towards the pubes, iſchium or ſacrum.

Ninthly, From an hydrocephalus, or from a dropſy of the body, whereby the child may be greatly enlarged; or when it has been long dead, and its body is diſtended with putrid air, which often happens to that degree, as to occaſion a moſt difficult birth.

And tenthly, From a too ſmall or diſtorted pelvis, eſpecially the latter; as for inſtance, when the great angle of the os ſacrum is ſo

very

very prominent as to come within two inches or leſs of the ſymphyſis of the pubes; when the pubes, inſtead of bending naturally outwards in form of an arch, is angular, or flat, or projects inwards; or when the tuberoſities of the iſchii, or apex of the coccyx, are turned preternaturally inwards at the bottom of the pelvis.

Diagnoſtics in general.

§. II. Women (aged above thirty) who have a ſtrong habit of body, and work hard, are very ſubject to have ſuch labours, eſpecially the firſt and ſecond time; likewiſe thoſe who are very tall, whoſe hips are narrow, backs hollow, and conſequently bellies prominent; and ſuch as have been ricketty in their child-hood, eſpecially if the ſpine be much diſtorted, the pelvis being often ſo too. I ſay much diſtorted; for I have delivered women whoſe ſpines have been a little ſo; and others, who have been lame in one hip from their infancies, yet both ſorts had kindly labours.

Prognoſtics in general.

§. III. When a woman is well formed, has enjoyed good health prior to the labour, has no ſchirroſities, nor any other diſeaſe in the paſſage, no inflammation in the lungs nor pleura, no hœmorrhage from the noſe, lungs or uterus, in any degree however to endanger life; has no convulſions, and it is certain alſo that the child is alive; the operator then may venture to predict a favourable event, though two or three days may ſometimes elapſe before it is obtained.

But when the labour becomes violent, and an inflammation, hœmorrhage, or convulſions ſupervene; if the pelvis is diſtorted, or the paſſage in any reſpect preternaturally obſtructed; or if the child has been long dead, he may, as prudence directs him, forewarn the relations of the difficulty and danger: but he muſt always take care to encourage the patient as much as poſſible.

Signs in particular.

Though the numerous ſymptoms attending thoſe births, when particularly conſidered, are ſo various, and ſometimes fallacious, as to make it hardly poſſible to aſcertain them; I ſhall nevertheleſs endeavour, for the ſake of the learner, to give, in this chapter, a particular detail of ſuch as ariſe uſually from the fourth claſs of the preceding cauſes when left alone to nature; and, in the four ſucceeding chapters, deſcribe thoſe which belong to the reſt, together with the method of aſſiſting delivery.

Firſt then, the patient, for ſeveral days, is afflicted with cholic pains, which are often ſo very urgent, as to make her believe herſelf in labour: her belly is at times bound, at others looſe; ſhe ſleeps but little, and paſſes the nights uneaſily.

When labour begins, the abdomen remains ſometimes high towards the pit of the ſtomach and navel; the labia pudendi are thick and rigid; the vagina is not very open, and its orifice feels tenſe, ſometimes full or tumified. The os uteri remains high in the pelvis; the child's head bears but little upon it; its edges are uſually about the thickneſs of half a crown; it opens but very ſlowly, and there is ſeldom an emiſſion of mucus from it. Nor do the membranes, with the liquor amnii, form a tumor, as in the natural parturition. If they do form one, they often break early, and the waters keep dribbling off during moſt of the labour.

The pains begin ſlow, ſhort and irregular; are ſometimes confined chiefly to the back, to one hip, or to the lower part of the belly.

And although the patient complains bitterly of their being ſtrong and ſevere, yet they make but little impreſſion on the os uteri; ſo little indeed, that twelve hours ſometimes paſs before it is opened equal to the breadth of half a crown.

Perhaps

Perhaps now, for an hour or ſo, they will come on every ten or twelve minutes; force down a little more, and appear to be very ſtrong, giving hopes to the perſons about her that ſhe will ſoon be delivered, yet have very little influence on the orifice, and ſoon go almoſt off. Some hours are ſpent again; during which time, ſhe ſuffers great uneaſineſs; her reſt is interrupted, and her ſtrength is debilitated. The pains are extremely ſhort, and come but ſeldom; the os uteri is, perhaps, a little lower, yet remains the ſame in its thickneſs, and is very little more dilated.

About an hour after this, they come on again more frequently, and with greater force; the orifice now gives way a little, the patient is ſick at ſtomach, and vomits; the pulſe quickens, the child's head bears a little down; the vagina ſhortens a ſmall matter, but opens not kindly; the liquor amnii keeps draining off, but the external parts are ſtill cloſe and rigid; there is often a mictus urinæ; and thus ſhe goes on for ſeveral hours, giving flattering hopes of a ſpeedy releaſe; till ſtrength beginning to fail by the continual toil and want of ſleep, the pains again ſlacken.

She now appears greatly fatigued; her pulſe becomes very much hurried; ſhe toſſes about in the bed; is extremely uneaſy; wants to ſleep but cannot; for, as ſoon as ſhe begins to doſe, a pain diſturbs her; and thus ſhe goes on for many hours longer, till not being able to contain herſelf, ſhe ſcreams out during each effort, and when it is off, ſhe bemoans her miſerable ſtate.

The pains, after a while, come on again, and appear ſo ſtrong, that thoſe who attend her think now ſhe will be delivered: nevertheleſs, the os uteri is perhaps all this time not opened above the breadth of a crown piece; and, as to the external parts, they are ſtill cloſe and rigid.

Soon after this, the head will ſometimes force more ſenſibly upon the os uteri, by which it will open a little, and deſcend ſo freely in the pelvis, as to make an unexperienced practitioner imagine that both the patient and himſelf will ſoon be releaſed. But preſently the pains ſlacken again, the head halts; and the ſuffering woman being now entirely worn down by the violence of the labour, and the want of reſt, falls into ſleepy doſes; out of which, ſhe at firſt is often awakened by ſhort and feeble pains; but after a while, they becoming ſtill weaker, ſleep prevails, and ſhe enjoys repoſe for ſeveral hours, during which time, ſhe is now and then diſturbed by a ſlight effort.

Having ſlept thus for ſeveral hours, the labia pudendi, vagina, and os uteri, all become ſofter, opener, and more yielding; ſhe retches, vomits, and now commonly the pains revive.

They begin more regularly at the loins, and come round to the pubes; the head advances in the pelvis; and that part of it which preſents (whether it be crown or vertex) is raiſed up from the ſcull into a conic, ſoft, or pulpy tumor.

The os uteri ſpreads, and perhaps diſcharges a ſlimy or ſanguineous mucus; the liquor amnii keeps draining; and as the head advances thus, a teneſmus comes on, eſpecially if fœces are lodged in the rectum; the mictus urinæ is leſſened: nevertheleſs, the os vaginæ does not open kindly; and the labia remain tenſe, and ſometimes thick.

Several hours are now ſpent in this manner, and during this time her ſtomach has perhaps retained ſome food; her countenance begins to appear a little cheerful; the ſtrength and pains to revive; the os uteri to open ſo well as ſcarcely to be felt; and the apex of the head having come to the os vaginæ, ſhe now, herſelf, begins to expect a quick releaſe; the anxious (and often very impertinent) attendants think every pain will be the laſt; and the midwife too is flattered with expectation;

tion; but ere long, their hopes begin to ceaſe: for not uncommonly after all this, the pains ſlacken, become ſhort and weak, and conſequently the head remains jammed in the pelvis.

The pulſe becomes now very full and quick; and many hours paſs without any perceptible progreſs; notwithſtanding which, the afflicted woman has pain all the time, not unuſually an increaſed degree of it round the pelvis, ſometimes in one hip, fore part, or outſide of the thigh, and ſometimes in both, which makes her again bewail her unhappy lot.

Reſpiration grows very quick, and at laſt, on a ſudden, the pains revive; the child's head bears upon the os vaginæ; the labia pudendi begin to be ſtretched; and the perinæum to be puſhed out.

She now regains freſh vigour, her countenance enlivens, ſhe vomits, her thighs tremble, the ſenſation of a teneſmus returns, ſhe bends her body forwards, and aſſiſts her pains with ſurprizing ſtrength; and thus ſhe goes on perhaps an hour or two, during which time, the child's head comes gradually through the os vaginæ in the following manner; viz. each pain makes it bear againſt the perinæum and os vaginæ, by which the latter is dilated, and the labia and perinæum gradually extended. When the pain goes off the head goes back; and when the next comes on, it again advances: the apex or tumor on the part which preſents grows fuller and larger; and as it comes through the orifice, it paſſes forwards along the anterior ſide of the pubes, till a conſiderable part of the head, which in this caſe is commonly very long, having come forth to the temples, the edge of the perinæum ſlips back on the face, the whole head arrives ſoon without the labia; and then the body and the ſecundines follow, or are brought in the manner as deſcribed in Chap. III.

All this will nature do and ſuffer during two, three, or ſometimes four days! And yet, by the end of the month, frequently much ſooner, the patient recovers perfect health.

Nevertheleſs, it muſt ſtill be allowed, that for the want of proper help in ſuch caſes, many women have been ſubjected to ailments of various kinds; and, beſides, the child having remained ſo long in the paſſage, is often born dead.

CHAP.

## CHAP. VI.

## OF THE ASSISTANCE NECESSARY IN DIFFICULT PARTURITION.

HAVING in the laſt chapter explained what we call difficult parturition, we ſhall now proceed to conſider how nature, in this ſituation, is to be aſſiſted by art. The method of helping by the uſe of medicines, and that of the hand, ſhall be allotted to this chapter; and what regards the uſe of inſtruments, ſhall be reſerved to the three following ones; excepting only, as we paſs along, to point out when the latter is required.

In reſpect to the births, they ſhall be treated of according to the order in which the claſſes of their cauſes has already been placed.

§. I. Firſt then, when the obſtetric practitioner is called to a patient who is conſtitutionally weak, and whoſe labour proves lingering, though the pelvis is of a natural ſize and form, the child's head ſo likewiſe, and preſenting right, and the orifices opening kindly, the delay of the birth, in ſuch a ſituation, may be ſuppoſed to ariſe from the mother's debility. Nevertheleſs, I am apt to believe, that difficult births do but ſeldom ariſe from this cauſe, for I have attended many ſuch patients, whoſe labours have been very kindly; but as they do ſometimes happen, I ſhall here lay down a method of aſſiſting, which may be uſeful not only in ſuch caſes, but in ſome others. It is this: Difficult births from natural debility.

Let the patient be duly ſupplied with nutritive diet; as for example, good caudle, broths of different kinds, white meats, if ſhe can eat, with a glaſs or two of wine afterwards, provided it agrees ſo well as to refreſh her: but any degree of intoxication, either with this, or

with any other ſort of liquor, muſt be carefully avoided; becauſe, by ſuch an error only, births of every kind are generally protracted.

Aſſiſtance by medicines.

The rectum muſt be emptied with an emollient enema, as occaſion requires; after which, the bed being properly prepared, ſhe muſt endeavour to compoſe herſelf as much as ſhe can between the pains; and, that ſhe may have liberty to ſleep, the company muſt retire. After this, if the pains continue to diſturb her, and not to produce the deſired effect, the following draught (eſpecially if ſhe has reſted badly for ſometime) may be taken.

I ℞ Confectionis cardiacæ ſcrupulum unum,
Aquæ caſtorei ſeſcunciam,
Tincturæ ejuſdem,
Vini crocei, ſingulorum ſeſquidrachmam,
Tincturæ thebaicæ guttas ſedecim,
Syrupi e corticibus aurantiorum drachmas duas;
Miſce, fiat hauſtus ſtatim ſumendus.

Moreover, two or three ſpoonfuls of ſuch as the following cordial mixture, may be taken between whiles.

II ℞ Confectionis cardiacæ drachmam unam,
Aquæ pulegii ſimplicis uncias ſex,
Spirituoſæ,
Syrupi croci, ſingulorum unciam unam;
Miſce.

Or inſtead thereof, the following drops:

III ℞

℞ Spiritus lavandulæ compoſiti unciam
unam;
Capiat guttas xxx. ſuper ſaccharum ſubindè
preſertim in languoribus.

Beſides theſe means, he has little more to do than to ſee that the air in the room is kept in a temperate ſtate, eſpecially not too hot; and every now and then to know by the touch how the birth advances, till the pains revive, and the head begins to move ſenſibly forwards in the pelvis; at which time, the parts being well anointed, care muſt be taken to conduct the head ſafely through the orifices, as directed in Chap. III. But if it ſhould happen that twelve hours or more are thus elapſed, and the pains have ſtill had no effect, or now go off; in this caſe, provided the birth is ſo forward that the vertex has begun to enter the os vaginæ, and the forehead to bear againſt the perinæum, rather than to ſuffer the woman to undergo the fatigue of a ſecond labour, I think the child may be extracted by the forceps. But if the head is not ſo low, he muſt ſtill purſue the cordial plan, and wait till it is; at which time, if the pains are yet inſufficient, the forceps may then be uſed. Previous to this attempt however (as well as in ſome of thoſe births to be hereafter treated of) the veſica urinaria muſt be emptied, either naturally by the patient herſelf, or by the operator, as in Part II. Chap. III. §. III. or in the following manner:

By the hand.

By the forceps.

The patient being placed as for natural delivery, the operator muſt place the catheter (dipped firſt in oil) in a flat warm baſon, and paſs them under the bed-cloaths cloſe to the pudenda, then paſs the fore finger of his left hand to the under edge of the meatus urinarius; which, as ſhe thus lies, he will feel a little before the anterior edge of the os vaginæ. This being done, he muſt take up the catheter with

How to paſs the catheter.

his right hand, and guide its point into the meatus by the finger, which was placed there.

Whilſt he paſſes it along the urethra, the concave or curved ſide muſt be towards the pubes, and the point kept cloſe to the ſame, until it gets above the brim, when it muſt be directed more forwards, to prevent the urethra and neck of the bladder from being bruiſed or hurt, between its point, and the child's head; which, at this time, muſt alſo be raiſed a little in the pelvis.

When the urine is obſtructed in the birth, the bladder is ſometimes raiſed conſiderably above the pubes, whereby the urethra is lengthened beyond its natural ſtate; ſo that three inches of the catheter may be paſſed before its point is fairly within the bladder: upon its arrival there, the urine will iſſue forth; and, when it is extracted, the inſtrument muſt be gently withdrawn.

From accidental debility. When a debility of nature has been occaſioned by ſome previous diſeaſe; by longing for ſome kind of food, which the patient could not obtain; by long grief; diſagreeable news, or any kind of ſurprize: due regard being had to theſe circumſtances (which muſt depend upon the diſcretion of him who attends) the method of aſſiſting in other reſpects, muſt be the ſame as that above.

From miſcon- §. II. When the delivery has been retarded by miſconduct, as for inſtance, over-heating and hurrying the patient, or diſturbing her reſt, &c. the cooling and ſedative plan is then to be uſed, as for example, ſhe may drink teas of any kind; orangeade or lemonade, with the addition of a very little wine; but preferable to all, are weak broths of chicken, beef or mutton; weak caudle, panada or puddings, may alſo be allowed; but meats, though the appetite may require them, muſt be eat but ſparingly. If the pulſe is very full and quick, as generally happens in thoſe who are young and very plethoric,

plethoric, venæſection in the arm is ſometimes neceſſary. The rectum muſt be fomented with emollient glyſters; and ſleep, or at leaſt a reſpite from the pains muſt be obtained if poſſible, by ſuch an anodyne as the following:

IV ℞ Tincturæ thebaicæ guttas vigenti,
Spiritus lavendulæ compoſiti guttas triginta,
Aquæ fœniculi ſeſcunciam,
nucis moſchatæ,
Syrupi caryophyllorum rubrorum,
Singulorum drachmas duas;
Miſce, fiat hauſtus ſtatim ſumendus.

And a few ſpoonfuls of a cooling cordial, ſuch as the following, may be given as often as ſhe awakes; and afterwards occaſionally.

V ℞ Aquæ ſeminum anethi uncias ſex,
—— nucis moſchatæ unciam unam,
Syrupi e ſucco aurantiorum, drachmas ſex,
Vini crocei duas drachmas;
Miſce.

Theſe particulars being obſerved, the birth is to be aſſiſted by the hand, as directed in Chapter III.

From rigidity of the orifices.

§. III. If the patient is of a good ſize and form, muſcular, and works hard; if the labia and orifices remain full and tenſe, notwithſtanding the pains have been very ſtrong, and have continued long, and the child's head preſents right in the pelvis, it may be concluded, that the difficulty ariſes from the rigidity of the fleſhy parts,

that is, of the os and cervix uteri, vagina, labia pudendi and perinæum. This caſe requires much time; during which, the patient muſt be kept moderately cool, and as quiet as poſſible. An emollient glyſter may be injected every ten or twelve hours, and once in twenty-four (or oftener, if there is occaſion) ſome reſpites of eaſe muſt be obtained by an anodyne.

In the mean time, the parts muſt be often anointed with emollients: warm oil may be injected between the child's head, and inſide of the os uteri, with ſuch a ſyringe as that delineated in Plate X. and when ſuch cannot be had, a large piece of hard exungia, or freſh butter, being paſſed into the vagina, and left there to diſſolve, will do good. When the head comes low in the pelvis, the anterior part of the os uteri may be cautiouſly ſlipt forwards from before it, towards the os pubis, with the point of the operator's finger; and while a pain is on, if two fingers are placed in the vagina, and the poſterior part of its orifice, together with the perinæum and the apex of the coccyx, kept a little downwards and backwards, from touching the head; the latter, by this means, will be felt to advance. Nevertheleſs, this muſt be done with caution, and but very ſeldom; for working much, is always productive of more hurt than good. Beſides theſe endeavours, he has little more to do, but to take care that the patient is refreſhed properly, and her poſition made as eaſy to herſelf as poſſible, provided it is ſuch as doth not diſturb the birth. Theſe means being uſed, nature generally does the reſt herſelf.

Indeed, if after waiting very long, the pains ſhould happen to go off, leaving the patient extremely low and faint, and the child's head halting at the os vaginæ, as hath been obſerved in §. I. rather than run the chance of a renewed labour, whereby the mother muſt undergo perhaps a great deal of more fatigue, and the child be in danger alſo of being loſt, by remaining ſo long confined in the paſſage; the delivery, for theſe reaſons, may then be haſtened by the forceps.

§. IV.

From the extraordinary length of the head.

§. IV. When the difficulty is owing to the extraordinary length of the child's head, there is uſually no deficiency to be obſerved as to the pains, nor any confinement to be felt in the pelvis, beſides what, in this caſe, muſt be occaſioned by its curvature; ſee Part I. Chap. IV. §. VI. nor is there any rigidity of the orifices. The vertex is in form of a ſugar loaf, and may be moved in the paſſage to and fro with little difficulty. But when it comes low, it then remains long at the perinæum, and from thence turns round very ſlowly towards the os vaginæ; through which, many of the ſtrongeſt pains are commonly exerted to bring the head wholly forth.

From the narrowneſs of the pelvis, or very large ſize of the child's head.

When the difficulty is occaſioned by the narrowneſs of the pelvis, or allowing this to be of an ordinary ſize, if the head is too large for paſſing on till its form is altered by compreſſure, the caſe is much the ſame; and may be known, firſt, by obſerving the external form of the patient; and ſecondly, examining the pelvis by the touch. As to the ſigns attending the head's progreſs through the paſſage, they are nearly the ſame in both caſes; as for inſtance, the head remains long above the brim, and as it is driven with infinite labour, that is to ſay, by the exertions of the mother, through the ſuperior ſtrait, the vertex is ſqueezed out in form like that of the natural long head, and deſcends alſo through the pelvis in the ſame unwieldly and tedious manner as it doth; or rather more ſo, becauſe, in theſe two caſes, though there may be no natural rigidity of the orifices and other fleſhy parts; yet, by their being ſo long compreſſed between the head and walls of the pelvis, and heated alſo by the violence of the labour, it is not uncommon for them to be greatly tumified, which in ſome degree muſt increaſe the reſiſtance.

The method of aſſiſting in the three caſes (comprehended in this ſection) is nearly the ſame. A great deal of time is required, during which, the patient muſt be carefully ſupported with proper nutrition,

due

due reſpites of eaſe muſt be obtained, and refreſhing cordials given, as directed in §. I. II. and III.

From the head's reſting on the pubes.

§. V. When a woman has been a day or two in labour, and the operator finds the orifices open, ſoft and yielding; the os uteri remaining high, the liquor amnii draining off, and the child's head ſo high as juſt to be felt; though the patient's form may ſeem good (but, for the moſt part, this caſe happens in thoſe women who have hollow backs) he may then conclude that it reſts upon the brim of the pubes. In this caſe, if the patient has not made urine freely, or cannot now do it, the operator muſt aſſiſt by the catheter, then paſs one or two fingers through the os uteri, in between the ſymphyſis of the pubes and the head; by which means, the latter being heaved up, whilſt, with his other hand, a preſſure is made upon the outſide of the abdomen, juſt above the pubes, the head may be thrown back towards the great angle of the ſacrum (which, in this caſe, is uſually very prominent) and then falling into the cavity of the pelvis, it will often advance ſo quickly, as in leſs than an hour to come forth. I muſt, nevertheleſs, take notice here of what was hinted in Chap. II. §. IV. namely, that in ſeveral caſes where the quantity of the liquor amnii is very large, the child will reſt above the pubes for ſeveral hours, till a conſiderable part of this fluid is run off, and then it will deſcend very ſuddenly; for which reaſon, I would have the operator recollect what the ſize of the abdomen was, before the liquor amnii began to flow, and how long it is ſince; and never offer help by the hand, or any other ways, till he is certain that the caſe requires it. On the contrary, if it ſo happens that, after the patient has been properly refreſhed by the above means, a reaſonable time has been waited without the head's approaching, he may then ſuſpect the delay to be occaſioned by a bad poſition: therefore, having paſſed his hand gently

gently through the orifices (provided they are ſo well opened as to admit of it) he may endeavour to find out both the ſize of the pelvis, and the ſituation of the head; which being done, if the head cannot be eaſily moved ſo as to preſent right (as commonly is the caſe) and the pelvis will admit of bringing it whole (which it will do if it is above the third dimenſion; ſee Chap. VIII.) he may then advance, and deliver by turning, as directed in Chap. IV.

From the anterior part of the os and cervex uteri, &c.

§. VI. When a woman has been long in labour, and the operator finds the os uteri pretty well opened towards the os ſacrum, but the anterior part of it remaining before a conſiderable part of the head, which perhaps is now advanced to the middle of the pelvis; and a ſemi-lunar tumor or fulneſs extending from this edge of the orifice, to the ſymphyſis of the pubes, he may then conclude, that this is part of the cervix uteri, bladder and vaginæ; which, being puſhed down, obſtructs the birth.

In this caſe there is commonly a difficulty, and ſometimes an obſtruction of urine; therefore, if he is not certain that the bladder is perfectly relieved, this particular muſt be taken care of firſt; an emollient enema muſt be injected next; and then the patient may be duly refreſhed with proper aliments, &c.

When the parts are well anointed, he may now paſs a finger (the nails being cut ſhort) between the head and the anterior part of the orifice; then, as a pain approaches, ſlide this edge of the orifice and the tumor from before the head, gently forwards to the pubes.

This method may be uſed every ſecond or third pain, for three or four times, provided the pains aſſiſt, and cauſe the head to move forwards at the ſame time; if they do not, he muſt then be quiet, and try to recruit the patient's ſtrength, by ſuch diet and medicines as recommended in the preceding ſections. When the pains return, and

the

the vertex arrives within half an inch or ſo of the perinæum, he may then aſſiſt as above directed, with this difference, that as the tumor is now uſually diſpoſed to paſs upwards from between the head and lower edge of the pubes, he muſt place the ends of two fingers againſt it, as a pain is coming on, and ſupport it a while; by which help, it will ſoon go ſo well up, as not to be felt again. After this, the delivery may be obtained as in the former caſes.

Theſe means being neglected, it is not unuſual to find the tumor mentioned puſhed down before the head, even ſometimes without the os vaginæ; the conſequence of which is, that the patient, after delivery, feels a ſenſation of a bearing down; and ſome women have more, viz. a deſcenſus vaginæ et uteri.

From the neck's being entangled in the funis.

§. VII. When a labour proves untoward, and very lingering, though there is no unuſual ſtraitneſs, or any kind of obſtruction to be felt in the pelvis; when the head, though advancing very ſlowly, is forced a little down by each pain, and then retracts; when this retraction becomes more perceptible as the head deſcends, and when the pains are all the time very ſhort, though apparently the woman makes all the efforts in her power, it commonly denotes that the neck is entangled in the funis.

Beſides, the cord being now ſo very ſhort as to pull down that part of the uterus to which the placenta is attached during each pain, the cervex may be folded, or ſo much relaxed as to allow the orifice to fall in before the child's ſhoulders; and, if this happens, it will occaſion a greater degree of obſtruction. As in the former caſe, ſo in this, much time is required; the diet and drink muſt be more or leſs cordial or cooling, according to the diſpoſition of the patient, and to the nature of the caſe. If ſhe has not intervals of natural reſt, a reſpite muſt be obtained by an anodyne, once in twenty-four hours; then

then, ſome attention being had to the relief of the bladder, and to that of the rectum, as in the former caſes, the operator has little more to do beſides waiting and aſſiſting as above directed.

Some other methods have been recommended by authors, which may be ſeen in their works: but, in my opinion, little or no good can be done with the hand, till the head comes to advance through the os vaginæ, and then the aſſiſtance to be given, is the ſame as in the preceding caſes; excepting, as the ſhoulders come forth, to be very careful to bend the child fowards, that is, with its breaſt cloſe to the outſide of the mother's perinæum, and then to bring down the reſt of the body, without moving the head and ſhoulders far back; by which method (ſee Chap. III.) there will be no danger of breaking the cord.

With reſpect to the ſecundines, their expulſion muſt be aſſiſted as directed in Chap. III. §. II.

Difficulties from the wrong poſition of the head, eſpecially when the face is towards the pubes.

§. VIII. When the face is towards the pubes, the vertex will point towards the lower part of the ſacrum, and then to the coccyx; the fontanel may be felt not far from the ſymphyſis of the pubes, and from the lower edge of that, to the perinæum and vertex, there will be a vacuity in the vagina, till the head comes very low; at which time, the vertex will ſtrike againſt the bottom of the pelvis, and puſh it prodigiouſly out, before it can be moved forwards to the anterior part of the perinæum; this part being the fartheſt it can reach; 'till the forehead is puſhed out through the orifices, and thereby made extremely prominent. During this time, the woman makes commonly very violent efforts, whereby the head bears ſo much upon the perinæum and poſterior edge of the os vaginæ, that theſe parts are now in the greateſt danger of being lacerated; and the child's noſe alſo is often diſtorted, by its being ſo violently preſſed againſt the pubes.

To the ſacrum.

When the face is towards the angle of the ſacrum, the part which preſents (inſtead of pointing obliquely forwards from the ſide of the pelvis, as in the natural way) will now be directly to the ſymphyſis of the pubes; and towards the poſterior and inferior part of the pelvis there will be an empty ſpace.

The manual aſſiſtance in both theſe caſes is the ſame, namely, to paſs two fingers, or more if there be room, and the os uteri be ſufficiently opened between the child's head and os pubis, then to ſlide the head ſideways, ſo that the part which lay next to the ſymphyſis may now be to one ſide of it, no matter which; and the nearer it can be moved to the ſide of the pelvis the better; for, by this poſition, nature will be enabled to compleat the work with leſs difficulty.

And downwards.

When the face preſents firſt, the mouth, noſe, and other parts are ſo greatly altered, eſpecially when it is forced a little down into the pelvis, as to make it very difficult to know what part it is which offers. Nevertheleſs, when the os uteri is ſo well opened, that the operator can paſs his finger all round between it, and the part which preſents, he will be able to find that it is the head, which is come into the pelvis; and if he minds the part which is downwards, he will feel it to be more fleſhy and unequal than any other part of the head that could offer, except it was one ear; in which caſe, it would eaſily be known; and beſides, if he preſſes the point of his finger a little againſt it, he will find the bones are very firm, and more unequal than any other part. But when it comes ſo low, that the mouth and chin can be felt, the caſe is manifeſt. All the help which can be given here (ſo far as I know) is to endeavour to raiſe the chin, and thereby let the upper part of the head come down; but then, this cannot be done (at leaſt I never could) when the head is low in the pelvis; and another misfortune is, that whilſt it is high, the os uteri is ſeldom or never ſo open as to permit the introduction of the hand without cauſing

cauſing pain and hurting the patient, which in all caſes muſt be carefully avoided. For this reaſon, I do not adviſe the whole hand to be paſſed early into the paſſage to find out the poſitions, that is to ſay, not till the parts are opened ſufficiently by nature to admit of its being done with ſafety. In all theſe three caſes, nature herſelf will do the work; but then it is with infinite labour; and when all is done, it muſt be allowed that the child is ſometimes ſtillborn, eſpecially when the face preſents.

What farther aſſiſtance is required in theſe three caſes, and in the two remaining ones, namely, the diſtorted pelvis and dead child, we ſhall conſider hereafter.

MVSEVM BRITAN NICVM

## CHAP. VII.

## OF ASSISTING BY THE FORCEPS.

FROM what hath been obſerved in the preceding chapters, it muſt appear now (I think evidently) that artificial help, by means of inſtruments, is ſometimes required. But as much miſchief may be done by uſing it improperly, I ſhall beg leave to be as explicit as I can on this ſubject; though, perhaps, ſome of it may ſeem very dry and tedious to the reader.

I have declared it, as my opinion, that forceps are the ſafeſt, and moſt efficacious means which can be uſed, in order to ſave both mother and child; and therefore, have recommended ſuch as I believe will be the leaſt apt to cauſe pain, or any other inconveniency, provided they are made as above directed, and are employed as will be taught hereafter.

The caſes that moſt frequently require their help, have chiefly been pointed out in the foregoing chapters, and appear to happen moſt commonly to women in their firſt labours, eſpecially if of a ſtrong conſtitution, and ſuch as work very hard.

When they are to be uſed.

As to the time of their uſe, ſome have allowed of it when but one half of the head has paſſed the ſuperior ſtrait; nay, ſometimes even before the head has come into the pelvis at all; and, in order to effect the delivery, directions have been given to dilate the os uteri, to apply them even ſo high as above the brim, and when that is done to lock them in the vagina, &c.

From this practice, I muſt beg leave to diſſent. Firſt, becauſe, I think to dilate the orifices and fleſhy parts in ſuch caſes, and then to attempt to fix the forceps, muſt be extremely hazardous. Secondly, becauſe

Plate VI.

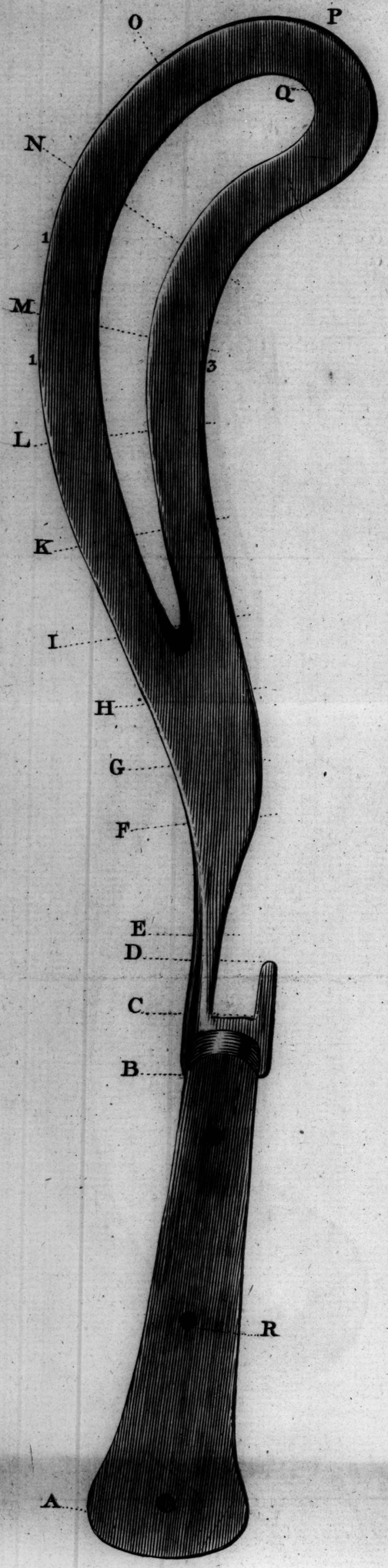


Fig. 1.

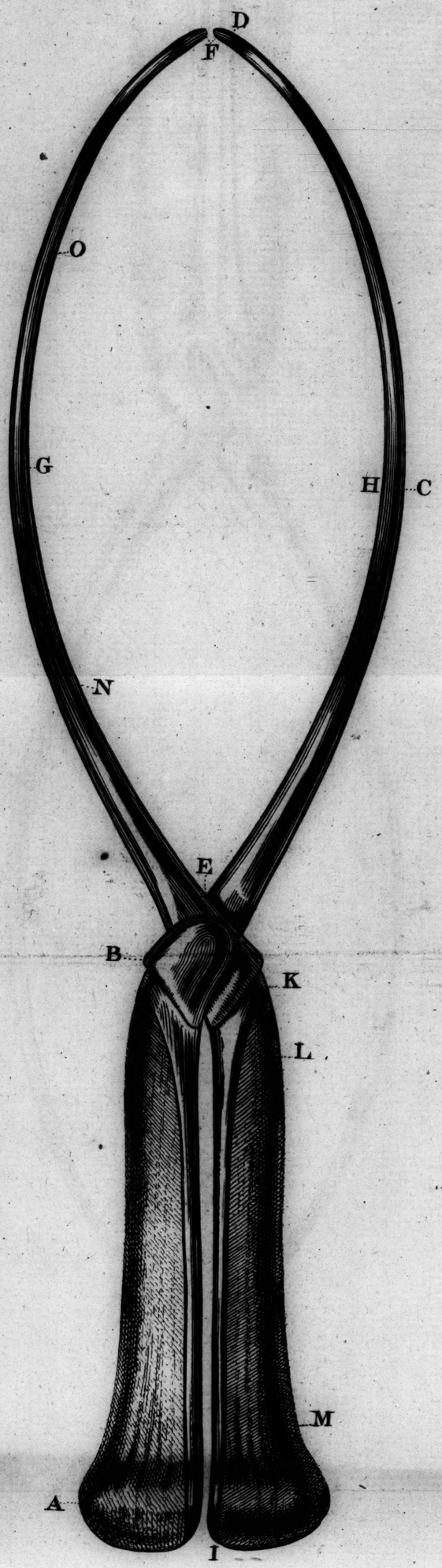


Fig. 2.

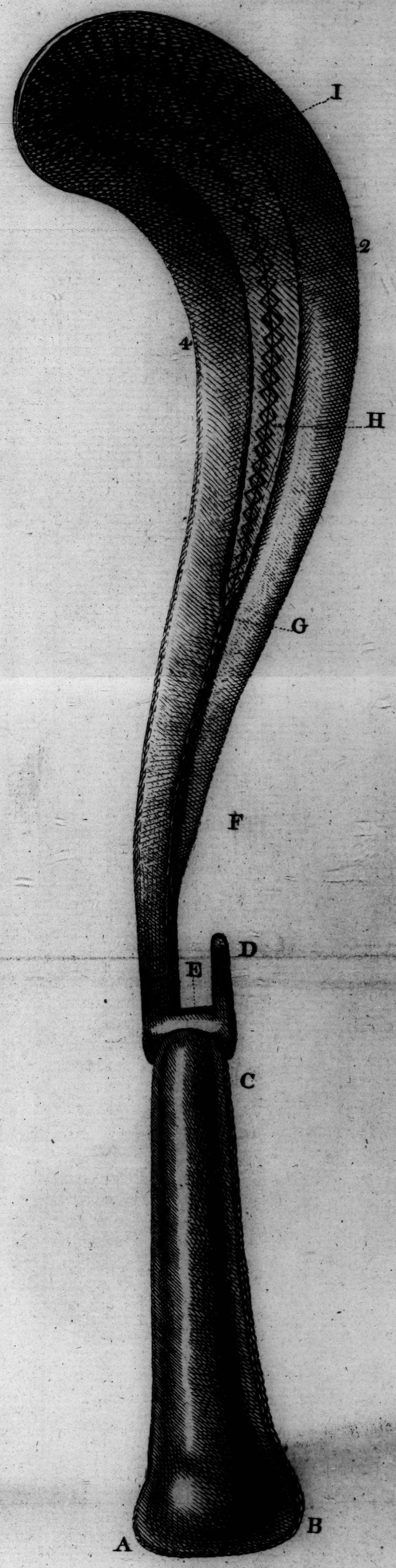


Fig. 3.

becauſe the time is premature, nature not having as yet made her principal efforts, unleſs it ſhould be what is commonly called a crotchet caſe, if ſo, it then will be conſidered in Chap. VIII. and thirdly, becauſe experience has taught me to believe, that in every caſe where nature is able to bring the thickeſt part of the head into the ſuperior ſtrait of the pelvis, ſhe will always be able to force it on till the vertex arrives at the os vaginæ, or at leaſt at the perinæum; by which time, her ſtrength being uſually exhauſted, the aſſiſtance of art is then demanded, and I think cannot, with juſtice, be refuſed; but more eſpecially whenever the life of mother or child is manifeſtly in danger. For, when the vertex begins to protrude through the os vaginæ, the os uteri is commonly ſo perfectly opened, and the os vaginæ ſo naturally diſpoſed to dilate, that the forceps may always be employed ſafely, as well as ſucceſsfully, in the manner I ſhall direct.

But before the head is ſo low as the perinæum, or preſents naturally, that is, with the face either towards the ſacrum and coccyx, or a little obliquely towards one of the ilia (which at this time it will moſt commonly do, if it is pretty long) I would never have them uſed, unleſs the caſe be extremely preſſing indeed. There are other poſitions of the face, however, which will admit of the head's being extracted by the forceps, and with ſafety too; eſpecially when it is either towards one of the ilia, or towards the ſymphyſis of the pubes; on which account, I ſhall direct how the application may be made in thoſe two poſitions alſo; hoping thereby that the whole of what belongs to every other caſe, which requires the forceps, will be underſtood as far as it is neceſſary. But before I enter immediately upon this part, I muſt again entreat the operator to ſee that the forceps which he is to uſe are made exactly according to the figures, not only in curvatures, bends, and ſizes, but that there be no edges or inequalities to preſs uneaſily on either the mother or the child. Some (I

Care to be taken that ſuch as are uſed are properly made. Plate VI.

doubt

doubt not) will cenſure me on this point for too much nicety, as well as tautology; I own the fault, and ſhould not have been guilty of it, had there not been many of thoſe forceps already vended without my knowlege, that are not made according to the model which I gave. To prove the truth of this aſſertion, I muſt deſire the gentlemen who have been purchaſers, to compare them with the figures and deſcriptions given in this work.

Some have had them covered with waſh-leather, a high ſeam running acroſs the outer ſides, which cannot but cauſe pain to the patient, if not injury. I have given my reaſons for their being covered with morocco, and ſtill believe it preferable to any other leather: but if ſome operators will not have this, I muſt requeſt them to take care that there be no ſeams on the outer ſurface, and that they are newly covered every time of uſing, for by this extremely ſpongious ſubſtance (namely, what is called waſh-leather) humours which are infectious may be abſorbed, and conveyed from one patient to another. Indeed, danger may ariſe alſo from thoſe which are covered with morocco, if care be not taken to waſh them very clean with ſoap and water, after each time they are uſed; and when the leather grows thick or foul to have them new covered. Nay, rather than neglect this, I could wiſh them not to be covered at all; in which caſe, the joints are only to be made cloſer in proportion to the want of the leather, an alteration eaſily to be made by the maker.

How to uſe them when the head preſents right.

§. II. Now, ſuppoſing theſe particulars enjoined, to be rightly obſerved, and that a caſe occurs which requires the forceps; as for inſtance, nature having had a reaſonable time allowed to make her efforts, and, though duly ſupported with diet and medicines, &c. as directed in the foregoing chapters, yet fails; even while the child remains in danger of being loſt in the birth by the long compreſſure; and the mother alſo in

in danger of being injured, not only by the preſſure which the child's head muſt cauſe upon the fleſhy parts in the pelvis during this time, but by the violent fatigue which ſhe is likely to undergo in the remaining part of the work, if not prevented by an artificial power. The operator, in this caſe, may apply the forceps as follows: but previous to the attempt, he muſt always take care that the bladder is emptied, either naturally by the patient herſelf, or artificially, as directed in Chap. VI. §. I.

The poſition of the head ought alſo to be known; if it preſents right, which is the caſe now before us, the apex of that part which offers firſt, will commonly point a little towards the ſymphyſis of the pubes, or obliquely towards one ſide of it, eſpecially if it has advanced but a little through the os vaginæ.

The os uteri being uſually now ſo perfectly opened, and aſcended ſo high as not to be felt by the operator's finger, the bulky part of the head will generally preſs pretty cloſe againſt the inſide of the pubes, and anterior part of the tuberoſities of the iſchii. If the ſcalp is not raiſed into a large tumor, the angular part of the occipital bone will ſometimes be felt pointing from the pubes, or rather from one ſide of the ſymphyſis, and either one or both the angles of the parietal bones riding over each edge of it, juſt as they join to form the ſagital ſuture. From this angular union of theſe three bones, the ſagital ſuture may ſometimes be felt running obliquely backwards towards the poſterior part of the pelvis, denoting the face to be that way.

And when a finger is inſinuated between the preſenting apex and perinæum, there will be room for its paſſing eaſily all round on this ſide, but more eſpecially in the place where the face is, unleſs the head is come ſo very low as to puſh out the perinæum: if ſo, the face will be turned more directly towards the latter; and externally, both perinæum, and the part of the head which advances firſt, will feel like a convexity extending equally between pubes and anus.

The poſition of the head being known, the labia pudendi, perinæum, os vaginæ, ſome of the vagina itſelf, eſpecially the poſterior part of it, and the part of the head which preſents, muſt be properly anointed with exungia, or ſome agreeable emollient unguent; the forceps muſt be anointed alſo, and placed conveniently in the bed, ſo as to be uſed without alarming the patient, or thoſe who attend. The patient's poſition muſt be the ſame as for natural parturition, with her nates pretty near to the edge of the bed. The operator alſo may either ſit in a chair, or kneel behind her cloſe to the bed.

Theſe particulars being obſerved, he muſt place one or two fingers of his left hand, between the head and poſterior ſide of the os vaginæ, take up the right ſide A D of the forceps with his right hand, ſlide its point in between theſe fingers and the head, with the convex ſide C towards them and the perinæum, and paſs it gently on between the head and the inferior poſterior parts of the pelvis, till it arrives above the middle of the ſacrum, which may be known when only about an inch of the clam is without the orifice.

Fig. 2.

In paſſing it thus far, I have not yet met any obſtruction or difficulty: Nevertheleſs, leſt the poſterior part of the os uteri ſhould ſometimes happen to be not obliterated, I will adviſe him to keep (as I have done) the clam (eſpecially its point) cloſe to the head, as he ſlides it ſideways upon it, till it comes near to the left ilium of the mother, more particularly towards the decuſſation of the pſoas muſcle, and poparts ligament; where it may be puſhed gently up, until its joint gets cloſe to that part of the child's head which preſents. Having gained this, he muſt take up the other ſide of the forceps, and paſs it in, and up between the head, the inferior and poſterior parts of the pelvis, in the ſame manner as he did the other; and when it has arrived above the middle of the ſacrum, it then muſt be ſlided ſideways upon the head, in an oppoſite direction to that of the other, and puſhed up gently till it is exactly oppoſite and equal to it; at which time, the handles muſt be decuſſated,

cuſſated, and brought by degrees to lock; much care being taken alſo, that no part of the woman be included.

When this is accompliſhed, he muſt wait for a pain before he begins to extract, for although the pains may appear to be very feeble at this time, yet, for the moſt part, they are hereby ſo much rouſed, as to aſſiſt him more than if double the force was to be applied without them. When to extract.

As he begins to extract, his line of action muſt be towards the perinæum, but as the head advances, and the perinæum becomes prominent, this action muſt be directed gradually forwards, ſo that the head may be brought in the ſame circular way, as obſerved by nature, in natural parturition. How to extract.

Beſides this curved line of action forwards, he muſt alſo, as he extracts, obſerve to move the head from ſide to ſide, and take care neither to make it, nor the inſtruments, bear too ſuddenly upon the os vaginæ and perinæum; but give theſe and the labia time to be diſtended gradually, in the ſame manner as nature doth in the natural birth; and he muſt looſen the handles alſo during the time of each interval, that the head may ſuffer as little as poſſible by the compreſſure of the clams.

As the head advances through the os externum, if it is yet oblique, the face muſt be turned to the perinæum, the hind part kept cloſe to the under edge of the pubes; and, as it paſſes by this edge, it muſt be turned gradually forwards towards the mons veneris; the perinæum, and the poſterior edge of the orifice being, at the ſame time, carefully ſlided back over the face; by which means, an overſtretching of thoſe parts will be avoided.

The head being thus extracted, the forceps are then to be laid aſide, and the delivery compleated as in natural parturition.

How to uſe them when the face is oblique, or towards one ilium.

§. III. When the head is low in the paſſage, and the face ſtill towards the ilium, the vertex will point to the oppoſite ſide of the bottom of the pelvis; and, as it advances, puſh that a little farther out than the other. The direction of the ſutures will alſo differ from what hath been obſerved in §. II. but, to know the poſition better, the hand muſt be gently inſinuated to ſearch for an ear; the alæ of which, pointing directly from the face, will diſcover it.

Plate VI. fig. 1. and 3.

The forceps here, as well as in the preceding caſe, muſt be applied ſo that their concave edges 3, 4, are in the direction of the alæ of the ears. The blade, which is to be next to the pubes, muſt be placed firſt, and with the greateſt caution.

The common way of placing one which is not curved, has been to puſh the hand up betwixt the head and the pubes, in order to guide the point of the clam ſafely between the os uteri and the head. This I have no objection to, even with reſpect to mine, provided ſuch an introduction can be acccompliſhed without either giving the woman much pain, or raiſing the head ſo conſiderably in the pelvis, as to render the application of both blades extremely difficult.

But as I have reaſon to think that ſuch inconveniencies muſt happen, I cannot but preſer the method of bringing the clam from behind forwards, as directed in §. II. For, in this caſe, it will paſs eaſily round the occiput, towards the ſymphyſis of the pubes; and then ſufficiently up, without much pain, or any other inconveniency, as I have often experienced.

Whatever way, however, the operator chuſes, let him take care to inſinuate the clam as gently as he can, and never puſh it againſt any part which reſiſts; but withdraw it now and then a little, ſhift it ſideways, keep its point cloſe to the head, and then advance cautiouſly again, till the joint is near to the under edge of the pubes, and the clam is felt to lie free and equally upon the head. This being gained,

he

he muſt paſs the other blade up behind, as directed in §. II. But not ſo high as the angle or upper part of the ſacrum. As he paſſeth it up, he muſt ſometimes halt, and bring it back a little; then, feeling if the point ſlides eaſily along the head without any obſtruction from the os uteri, &c. he may proceed. When the joint comes to that part of the head which preſents, he may pull it back about half an inch, and bring its handle acroſs the other in order to be joined. Should both handles come equally now together, ſo as to lock eaſily, it is very well, he may extract: but if he finds them twiſted, he may conclude, that the clams are not right. To remedy which, he muſt not uſe much force in endeavouring to untwiſt them, ſo as to make them lock; but ſhift one clam (or both if required) ſideways upon the head, till they encompaſs it more equally, and the the handles come to lock eaſily; which will generally be effected when the points P D lie before the ears, or on the lower Fig. 1 and 2
poſterior part of the temples. To know the direction into which he is to ſhift them, he muſt recollect the poſition of the face, that is which way it pointed when he firſt examined; and conſider alſo, that when the head is ſo low as here underſtood, the face, inſtead of being directly towards the ilium, may be diagonally towards the pubes; but, more commonly, obliquely towards the ſacrum. Therefore, in either of theſe oblique poſitions, he muſt take care to apply the forceps ſo that their concave edges, 3, 4, may turn towards the pubes as Fig. 1 and 3
much as required, whilſt the head is brought forth; otherways he will act in direct oppoſition to one intent of the curvatures, and thereby endanger the perinæum, &c. But to return, as he locks the handles, he muſt keep them a little forwards, and take care not to puſh the point of the poſterior clam forcibly againſt the upper part of the vagina or the cervix uteri; for if he be not cautious at this inſtant, miſchief may enſue.

When they are fixed, he may try, in the intervals of the pains, to twiſt the head a little, ſo as to bring the face (in caſe of its being either to-

wards the ilium, or obliquely backwards) towards the ſacrum: but, if this twiſt requires much force, or if the face is turned forwards, between the ilium and pubes, he had (in my humble opinion) better not twiſt, but extract the head in the way it offers, obſerving to bring it forwards from below the pubes, as directed in §. II. though with more time and caution, that no hurt may happen whilſt it comes through the os vaginæ. The head being brought forth, the delivery is then to be compleated in the ordinary way.

How to uſe them when the face is towards the pubes

§. IV. When the face is towards the pubes, it may be known by what hath been obſerved in Chap. VI. §. VIII. The forceps in this caſe, muſt be applied, and the head extracted as directed in §. II. but with this difference, that the head here is to be brought in the poſition in which it offers; therefore, the greateſt care is required to hinder the perinæum from being lacerated: for the crown and vertex will come ſo directly upon it, that unleſs the operator keeps the head and forceps very cautiouſly forwards, it muſt at leaſt be over-ſtretched. We may here obſerve, that both in this caſe, and when the face is obliquely between the ilium and the pubes, the curved edges 3, 4, will be towards the face, but not ſo in any other poſition which requires the forceps.

As it has been taught, and is ſtill the practice of ſome*, to introduce the hand firſt, and make it ſerve as a guide to the forceps; I ſhall, therefore, ſubmit my reaſons for deviating therefrom, to the judgment of the candid reader; they are as follows, firſt, in caſes requiring forceps, there is always left in the pelvis ſo very little room, that when the hand is paſſed, eſpecially ſo high as the os uteri, in order to guide the points of the inſtrument

* Doctor Mackenzie informed me that he had taught the contrary of this for ten or twelve years before the time of my firſt Publication.

within

within it, the woman muſt not only be put to much pain, but the head will be raiſed ſo high alſo, if not made worſe in its poſition, as to render their application both very difficult and hazardous. Secondly when the head bears down on the perinæum and os vaginæ, as above obſerved, the os uteri is commonly ſo well dilated, that the cavities of the uterus and vagina are both one; the anterior and lateral parts of the orifice continue, indeed, a little ſharp; but the poſterior part is ſo nearly obliterated, as to remain only like an obtuſe wrinkle, or tranſverſe ridge, admitting the points of the forceps to paſs very eaſily within it, when they are kept cloſe to the head. Thirdly, on the poſterior ſide of the pelvis there is always moſt room for paſſing them, unleſs the face is towards the pubes; if it is, the poſterior part is almoſt filled, but yet will allow of their introduction, as directed in §. II. Fourthly, theſe forceps having a double curvature, with their clams thin, ſmooth, and equal, and being paſſed up behind, can be ſlid from thence to any other part which is required, much more conveniently than ſtraight ones, or any other ſort I know of, without any hurt to mother or child; and with a great deal leſs pain than what muſt happen when the hand is introduced to guide them. And, Fifthly, becauſe I have found this method to be not only ſafe, but eaſy and ſucceſsful.

I will indeed own, that in caſes where the face has been directly towards the ilium, or the pubes, or obliquely between theſe parts, I have not uſed them often.

For, to ſpeak my mind freely concerning thoſe three poſitions, and moreover when the face comes foremoſt, I think it is much beſt to let nature do the work herſelf, unleſs the danger is extremely great indeed; and if it is, that the forceps ought to be uſed with the greateſt caution; for, beſides the danger in locking either theſe, or any other forceps, as hinted in §. III. and in bringing the head through the os vaginæ, as juſt obſerved, if the operator is unexperienced, or awkward

wards the ilium, or obliquely backwards) towards the ſacrum: but, if this twiſt requires much force, or if the face is turned forwards, between the ilium and pubes, he had (in my humble opinion) better not twiſt, but extract the head in the way it offers, obſerving to bring it forwards from below the pubes, as directed in §. II. though with more time and caution, that no hurt may happen whilſt it comes through the os vaginæ. The head being brought forth, the delivery is then to be compleated in the ordinary way.

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* Doctor Mackenzie informed me that he had taught the contrary of this for ten or twelve years before the time of my firſt Publication.

within

within it, the woman muſt not only be put to much pain, but the head will be raiſed ſo high alſo, if not made worſe in its poſition, as to render their application both very difficult and hazardous. Secondly when the head bears down on the perinæum and os vaginæ, as above obſerved, the os uteri is commonly ſo well dilated, that the cavities of the uterus and vagina are both one; the anterior and lateral parts of the orifice continue, indeed, a little ſharp; but the poſterior part is ſo nearly obliterated, as to remain only like an obtuſe wrinkle, or tranſverſe ridge, admitting the points of the forceps to paſs very eaſily within it, when they are kept cloſe to the head. Thirdly, on the poſterior ſide of the pelvis there is always moſt room for paſſing them, unleſs the face is towards the pubes; if it is, the poſterior part is almoſt filled, but yet will allow of their introduction, as directed in §. II. Fourthly, theſe forceps having a double curvature, with their clams thin, ſmooth, and equal, and being paſſed up behind, can be ſlid from thence to any other part which is required, much more conveniently than ſtraight ones, or any other ſort I know of, without any hurt to mother or child; and with a great deal leſs pain than what muſt happen when the hand is introduced to guide them. And, Fifthly, becauſe I have found this method to be not only ſafe, but eaſy and ſucceſsful.

I will indeed own, that in caſes where the face has been directly towards the ilium, or the pubes, or obliquely between theſe parts, I have not uſed them often.

For, to ſpeak my mind freely concerning thoſe three poſitions, and moreover when the face comes foremoſt, I think it is much beſt to let nature do the work herſelf, unleſs the danger is extremely great indeed; and if it is, that the forceps ought to be uſed with the greateſt caution; for, beſides the danger in locking either theſe, or any other forceps, as hinted in §. III. and in bringing the head through the os vaginæ, as juſt obſerved, if the operator is unexperienced, or awkward

awkward in paſſing up the clams, whether as above directed or guided by the hand, in the way which was formerly taught, the points may happen to get upon the outſide of the os uteri, and if they do, ſhould he then keep puſhing on, the upper part of the vagina muſt be perforated, and as they encompaſs the child's head, the os and cervix uteri will be included; the event of which is dreadful even to think of! Therefore, if he atttempts the operation at all, let him keep their points cloſely to the head, taking care when he finds any reſiſtance, to withdraw about an inch, ſhift when needful, and then advance cautiouſly again, as above directed. But to return:

In caſes where the head has preſented, as in §. II. I have delivered a great many women, ſome in five or ten minutes, others ſlowly, as in twenty or thirty; nay, in ſome caſes where the rigidity of the external orifice has been very great, I have waited and aſſiſted the pains gently for almoſt an hour, in order to give time for a gradual dilatation; and at laſt, have ſucceeded without the leaſt hurt to mother or child. In others, the child's head has appeared a little bruiſed, but, in a few days all has been well; and, as to the women, I know of none who have the leaſt complaint from the uſe of them. Nay, in many caſes, their application has been ſo quick and eaſy, as not to have been known by the patient.

A caſe where the forceps may be foiled.

§. V. Notwithſtanding what has been ſaid in §. II. III. and IV. there is a caſe which will foil the forceps, namely, when the head is conſiderably longer than the clams; for in this caſe, as they cannot get beyond the thickeſt part of the head, they cannot be fixed. This, however, will but rarely happen; if it doth, I would have him take care, and not have recourſe immediately to the uſe of the embryulcus, but ſupport nature, and give her time, for even now ſhe will ſometimes do the work herſelf.

He

He may alſo be hard put to it by meeting with diſeaſes in the paſſage, as ſchirroſities, &c. which being evils not reducible to any determinate method of cure, muſt be treated as he finds they require. More will be ſaid on this head in Chap. IX. Diſeaſes in the paſſage.

Beſides theſe caſes, there are ſupervenient ſymptoms which may happen to embarraſs him, as for inſtance, when either a flooding or convulſions come on in the time of labour, the head of the child being yet on its paſſage through the pelvis, but not ſo low as to admit the fixing of the forceps. Happy it is, however, that the former of theſe incidents happens but very rarely at this time, unleſs the placenta hath adhered ſo nearly to the os uteri, as obſerved in Chap. IV. §. XI. If the pains are pretty good, and the hæmorrhage moderate, it is not to be much dreaded; but when it becomes ſo violent as to threaten the life of the patient, the delivery muſt be effected either by turning, by the uſe of the forceps, or by that of the embryulcus; whichſoever of theſe ways the operator finds moſt conſiſtent with the nature of the caſe, a regard being always had to the life of the child, as well as to that of the mother, ſo long as the ſafety of the latter will admit of it.

Convulſions (I believe) happen more frequently, eſpecially to women who are naturally hyſterical; and yet, after a fit or two in the courſe of the labour, moſt commonly towards the latter end of it, they ſometimes go either entirely off, or the pains become ſo effectual, that all proves well.

But when they ſeize thoſe of ſtrong fibres, and of conſtitutions extremely ſuſceptible of irritation, even returning often, and continuing with violence, the danger is then indeed manifeſtly great.

To relieve the patient, the following method may be obſerved; if ſhe is plethoric, bleed to about eight ounces; but, whether ſo or not, let her take the following draught:

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℞ Aq. puleg. ſimp ℥jſs. tinct. theb. gr. xx.
tinct. caſtor. ſyr. ſimp. an ℥ij.
Miſce, fiat hauſtus.

A ſpoonful or two of the julepum e moſcho, or ſuch a mixture as the following may alſo be given from time to time;

℞ Aq. puleg. ſimp. ℥vj. ſal. ſuccin. ℥ſs. tinct. valerian. ſimpl. ſyr. croc. an. ℥j. m.

An emollient enema may be given alſo. But ſhould the convulſions continue violent, even after theſe means have been uſed, the patient's ſtrength failing, and the pains conſequently ſlackening, ſo much as to give no hopes of a ſpeedy delivery, I think it is beſt then to take away the irritating cauſe, namely, the child and ſecundines; unleſs the thickeſt part of the head is come through the ſuperior ſtrait of the pelvis; if ſo, and the patient's ſtrength will admit ſtill of ſome more delay, the operator may wait awhile; for though the pains may ſeem but very ſlight during the convulſions, yet the head will ſometimes come ſo low, that it may be laid hold of by the forceps; an inſtance of which I met with about two years ago, where both the mother and the child were ſaved in the birth, and did very well. But if the head is not ſo far advanced, nor the pains ſo forcing as to give hopes that it will deſcend time enough to fix the forceps, he may then raiſe it till he can paſs his hand by it into the cavity of the uterus, and deliver by turning; which I have alſo done ſucceſsfully, even whilſt the woman was in the ſtrongeſt convulſions.

Should a caſe indeed happen, in which the head is ſo ſtrongly forced down, and the uterus ſo violently contracted, that he cannot advance to the feet, without either exerting ſo much force, or taking up ſo much time as to endanger the loſs of the mother; or ſhould the pains

not be able to bring the head low enough for the forceps, I then know of nothing better than the embryulcus; by the help of which, there is no doubt but he may deliver the mother ſafely. But as the child cannot have the ſame good fortune, the operator ought ſtill to be cautious, and never attempt this way of delivering, till he is perfectly convinced of its abſolute neceſſity *. Nay, even then, the taſk is extremely diſagreeable. All I can ſay, is this, when he acts to the beſt of his judgement, what can be required more?

If, however, he is but a young practitioner, the calling in others of long experience, is moſt certainly right.

* The caſes which require this method of delivery, will be more fully conſidered in the next Chapter.

## CHAP. VIII.

## OF EMBRYOTOMY.

AS the obſtetric inſtruments of the antients were not (as appears to us) ſo well contrived as to ſave the fœtus in the birth; and as the operation of extracting it by them, through the natural paſſages, was called embryotomy, we ſhall here take the liberty to call the ſubject of this chapter by the ſame name.

I think I may venture to ſay (and it is with pleaſure I do it) that the practice of midwifery is now on ſuch a footing in this country (and I hope it is the ſame, or ſoon will be ſo in others) as almoſt to explode the prepoſterous practice of extracting infants before they are known to be dead, by ſuch inſtruments as cannot ſave them.

I ſay almoſt, for it ſtill muſt be allowed, that ſome caſes occur (though happy it is they are but very few) wherein it is not in the power of art to ſave both mother and child. Hyſterotomy, indeed, may be thought an exception; but what we have to ſay on this head ſhall be reſerved for the next chapter.

Though ſeveral authors have treated of the caſes which are here to be conſidered; and though it cannot be ſuppoſed but every experienced and judicious practitioner muſt know them; yet (as I humbly conceive) an explanation, ſerving to aſcertain the circumſtances, which, in ſuch caſes, exclude the poſſibility of ſaving the child as well as the mother, is ſtill very neceſſary; not only as an advantage to the ſtudent, but towards the preventing of ſuch fatal miſtakes, as it is to be feared, have too often happened in this part of the obſtetric practice.

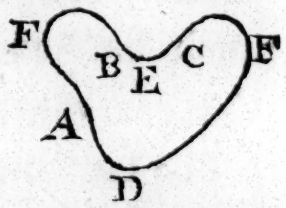
The

The caſes here meant, are thoſe which can neither be aſſiſted by the hand nor by the forceps, as directed in the preceding chapters; ariſing from ſomething wrong either in the mother or in the child; or in both together.

The cauſes of ſuch difficulty from the ſtate of the mother's pelvis.

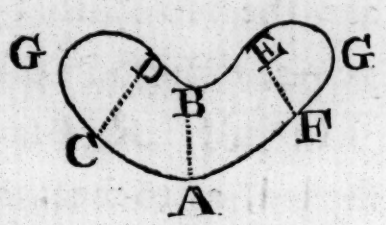
As to the mother, I am convinced (and I doubt not but many others are the ſame) that ſuch births may be occaſioned by a very ſmall pelvis, though in other reſpects there is nothing wrong.

In July laſt, I ſaw a pelvis of ſo ſmall a ſize, though very well ſhaped, as to meaſure only four inches betweeen the ilia, and ſcarcely two and a half from the angle of the ſacrum to the ſymphyſis of the pubes. A mature child (after an experienced and very ingenious operator had uſed his utmoſt endeavours to ſave it, as well as the mother) was obliged to be extracted through this pelvis by the common crotchet. That diſtortions of the pelvis bring on ſuch difficult births as theſe, the beſt writers and practitioners evince. In Dr. Hunter's muſeum, there is a pelvis, the diſtortions of which, ſerve alſo as a proof. Its brim is of this form.




The lumbal ſpine makes a large bend over the brim, and obliquely to the right ſide; forming it, as it were, into two arms, one larger than the other. The breadth of the right-arm (as I call it) from near the union A of the ilium and pubes, to the right ſide of that bend of the vertebræ B, which projects immediately over the pelvis, is only an inch and a half; and that of the other, meaſuring between the ſame parts on the left ſide at C, is two inches and a half. The diſtance, indeed, between the ſymphyſis D of the pubes, and projection E of the lumbal ſpine, is three inches; but betwixt the ilia F F, it cannot be ſo well aſcertained, becauſe the vertebræ are conſiderably before that place, where a ſtraight line for this purpoſe ſhould be drawn.

There is another pelvis in the ſame muſeum, extremely deformed, and ſo very ſmall, that the wideſt part of the brim is not above an inch. Nay, the whole ſtructure of this pelvis, being ſuch as apparently to have prevented the means of procreation, we ſhall ſay no more concerning it.




In January laſt, Dr. Kelly ſhewed me a pelvis, and a ſection which he had taken of the ſize and form of its brim. The form was thus; and the dimenſions (meaſured before me) were exactly as follow: the diſtance between the ſymphyſis A of the pubes, and the angle B of the ſacrum was only an inch, five-eighths and one ſixteenth. On the right ſide of this ſtrait A B, viz. at C D, it was two inches and one-ſixteenth; and on the left ſide at E F, it was an inch and a half; but between the ilia G G, it was five inches and three-quarters; which helps to explain how the child, when much flattened, could be brought through it in that manner, in which it was moſt ingeniouſly effected by the doctor.

The circumſtances attending this birth, being not only remarkable, but uſeful in regard to the ſubject before us, I ſhall here inſert them in the doctor's words, together with ſome very judicious remarks which he has made upon the caſe.

" In the year 1758, I was deſired by Mr. Ford, a ſurgeon practicing " midwifery, in Long-Lane, Southwark (now at Poole, in Dorſet- " ſhire) to give my opinion of a poor woman under his care, in the " pariſh work-houſe, who was at her full time of pregnancy, and " had been in ſtrong labour during the ſpace of five days; but with- " out the leaſt ſenſible advancement of the child's head into the pelvis; " the membranes and water diſcharged ſoon after her pains came on, " but the child's head remained above the brim of the pelvis as high " as at the beginning of labour.

" The

" The cauſe of this obſtruction was very manifeſt, for as he had
" ſent me word the pelvis was diſtorted in a very uncommon degree,
" and the projection of the ſacrum, and laſt vertebræ lumborum was
" ſo very diſtinguiſhable by the touch, that it was eaſy to judge by
" meaſuring with the finger, that there could not be more than the
" diſtance of two inches from that projection to the ſymphyſis of the
" pubes. The head of the child ſeemed to be large and firmly
" oſſified, and the parts in the paſſages were ſo extremely ſore and
" tender, that the poor woman could not bear the moſt gentle ex-
" amination without great pain. Under theſe circumſtances it was
" thought adviſeable to make a free opening in the cranium, and
" evacuate its contents, and then leave it to collapſe and ſettle into
" the pelvis gradually by the pains; for though the patient was
" ſomewhat faint, and much fatigued by a continuance of pain, her
" pulſe did not ſhew any ſigns of immediate danger. A large opening
" was accordingly made, but not without much difficulty, on ac-
" count of the head's projecting ſo much over the pubes, that the
" ſhank of the ſciſſors was preſſed forcibly againſt the perinæum, to
" get the points in a proper direction. The cranium being well
" emptied of its contents, and an anodyne adminiſtered, I did not
" ſee the patient again till the ſame time the day following; being
" well aſſured, that notwithſtanding the advantage that might be ex-
" pected from the method employed, it would require a conſider-
" able time before the head could poſſibly deſcend into the pelvis,
" low enough to make the extraction tolerably eaſy. I found her
" pains had been frequent, though not ſo violent as before; and on
" enquiring, found the head advanced into the pelvis, ſo low that
" the jagged edge of one of the parietal bones, was preſſing againſt
" the inner part of the perinæum, very near the os externum. By
" the help of the blunt hook, the head was brought forth in little
" more than a quarter of an hour, amazingly flattened; the ſhoulders

" ſtuck

" ſtuck about half an hour, and ſo filled up the paſſages, that it was " difficult to paſs the blunt hook to one of the arm-pits. The child " likewiſe ſtuck at the hips, but not above half ſo long as the " ſhoulders.

" The day after delivery, I found the patient remarkably well, and " ſhe continued to go on ſo till about the eighth day, when having " imprudently drank freely of raw porter with ſome people who came " to ſee her, ſhe was ſoon after taken with a violent purging, which " carried her off in three days, in ſpight of all that could be done " for her.

" N. B. Had there been an appearance of immediate danger, when " firſt I ſaw this woman, I ſhould have thought that nothing but the " Cæſarian ſection, could have given her a chance for her life; for " as to the method commonly made uſe of in diſtortions of the pelvis, " ſuch as we too frequently meet with, I mean that of proceeding to " extract with the crotchet, immediately after the diſagreeable ope- " ration of opening the head; it would, in this caſe, have been at- " tended with inſuperable difficulties; it muſt have been the work of " ſome hours, attended with much toil and embarraſſment to the " operator; and what is of much greater conſequence, more pain " and fatigue to the patient, than in all human probability ſhe could " poſſibly have borne, without ſinking under the operation.

" In the diſtorted pelvis which we commonly meet with, the diſ- " tance at the brim between pubes and ſacrum, is generally about " three inches; in ſuch, if the patient has a tolerable ſhare of " ſtrength and good pains, provided the child's head is not very " large, or though large, yet not too firmly oſſified to elongate and " flatten by preſſure; by waiting with patience, we have often the " pleaſure to ſee it come forth alive and well; but too frequently a " defect in one or more of thoſe circumſtances, reduces us to the diſ- " treſsful neceſſity of deſtroying the child to ſave the mother, even " in pelviſes of that dimenſion." Births

Births of ſuch a difficult nature as we are now treating of, do but ſeldom (as I imagine) ariſe from the bulkineſs of the child, unleſs it be dropſical; or, when long dead, much diſtended with putrid air. For, by conſidering the caſes which have occurred to me, I am led to believe, that women who are very ſmall, have moſt commonly children of ſizes in proportion to their own; ſo that allowing their pelviſes to be but little (though this does not always follow) yet if the operator finds ſuch a one well formed, and the child preſenting right, I think he ſhould always take care and wait a proper time before he has recourſe to any kind of inſtrumental means whatſoever.

Laſtly, What I mean by a difficult birth ariſing partly from the mother, and partly from the child, is when the pelvis is either diſtorted, or leſs than the natural ſize; and the child, at the ſame time, is rather above the ordinary ſize. Partly from the mother, and partly from the child.

§. II. Though it is evident ſuch caſes occur, yet, to diſtinguiſh them from thoſe wherein the child (if alive) may be ſaved, it is ſometimes very difficult; hence the operator, allowing him ſkilful, cannot be too circumſpect in making his inquiry before he begins the operation. Nay, though the patient may have formerly been delivered by art only; yet, nature is not to be diſregarded in the caſe now before him; nor is the extent of her power always to be known beforehand as to future ones: for even after ſeveral ſuch difficult births, ſhe will ſometimes effect a ſafe delivery by herſelf. Inſtances of this I have ſeen, and many others I have been informed of by gentlemen of veracity.

To diſtinguiſh thoſe caſes ariſing from ſomething wrong in the mother, it may be neceſſary to obſerve, firſt, the external form of her body; if her ſize is very ſmall, the lumbal ſpine diſtorted, the back How to diſtinguiſh thoſe ariſing from the mother.

very hollow, the hips very narrow, and one higher than the other, ſome difficulty is portended.

But to come to a certainty, an examination muſt be made by the touch when labour is begun.

On paſſing the finger along the vagina, if the coccyx, or any part of the ſacrum be felt unuſually forwards or near at hand; or if the ſymphyſis, or any other part of the pubes is found projecting rather inwards than outwards, it is evident that the pelvis is diſtorted. In which caſe, as well as in thoſe where it is not diſtorted, but only very ſmall, the principal part of the child's head (allowing the preſentation right) remains high, the vertex making only a little round tumor within the brim: ſo that when the os uteri is opened, and come a little forwards towards the pubes, the capacity of the pelvis may be found out by moving the end of the finger round that part of the head which has entered the upper ſtrait. This method is uſed by ſeveral practitioners in London. However, ſhould the finger not be long enough to effect it properly, as ſometimes is the caſe, there is then another method, which, being more certain, may be uſed, provided it be done with tenderneſs and caution, and when the orifices are ſo well opened as to admit of it with ſafety. But previous to it, the operator muſt be well acquainted with the dimenſions of his own hand, viz.

First dimenſion of the hand is full four inches.

Firſt, The fingers of a middle ſized hand (as we may ſuppoſe the operator's to be) being gathered together equally into the palm, and the thumb extended and applied cloſely along the ſecond or middle joint of the fore finger; the diſtance between the end of the thumb, and outer edge of the middle joint of the little finger is uſually four inches.

Second, three and a half.

Secondly, Whilſt they are in the above poſition, the diſtance from the thumb, at the root of the nail, in a ſtraight line to the outſide of the middle joint of the little finger, is full three inches and a half.

Thirdly,

Thirdly, The fingers being ſtill in the ſame ſituation, and the thumb laid obliquely along the joints next the nails of the firſt two fingers, and bent down upon them. The diſtance between the outſide of the middle joint of the fore finger, and the outſide of that of the little finger is three inches and a quarter. Third, three inches and a fourth.

Fourthly, the hand being opened, and the tops of the four fingers being a little bent, ſo as to come nearly in a ſtraight line, their whole breadth acroſs the joint next the nails, is two inches and a half. Fourth, two and a half.

Fifthly, when the firſt three fingers are thus bent, their breadth acroſs the ſame joint is two inches. Fifth, two.

Sixthly, The breadth of the firſt two, acroſs the nail of the firſt finger, is one inch and a quarter. Sixth, one-fourth.

And ſeventhly, The hand, being formed as directed in Chap. IV. §. III. will meaſure in thickneſs, between its back and the fore part of the thumb, two inches and two-eighths. Seventh, two two-eighths.

Now, as hands are extremely various, the operator ought always to know how much the ſize of his differeth from the above dimenſions, and this being rightly underſtood, the application may be made as follows:

The patient, being in the poſition as for natural delivery, and the operator's left hand being well anointed, and the fingers and thumb gathered into a cone, it muſt be gently paſſed into the vagina, and then through the os uteri, unleſs in this part there is ſtill a rigidity to forbid it; if ſo, the fingers only muſt be paſſed, their extremities formed into the fourth dimenſion, and then placed edgeways in the ſtrait; which being done, if the fore finger touch the angle of the ſacrum, and the little one the ſymphyſis of the pubes, the width is then manifeſtly no more than two inches and a half; a ſpace through which a mature child can neither paſs alive, nor be brought ſo by art, unleſs it happens to be preternaturally ſmall indeed. If he has reaſon

to think it is, and that the os uteri is diſpoſed to dilate, and the pains alſo inclined to bear down with conſiderable force; he may wait awhile to ſee what nature can do, but during this time, he muſt take care to ſupport the patient duly with ſuch diet and medicines as thoſe directed in the preceding chapters. Theſe particulars being obſerved, if the child comes forward it is very well, let nature do the work; but if it doth not advance (which moſt likely will be the caſe) the delivery muſt be obtained by art.

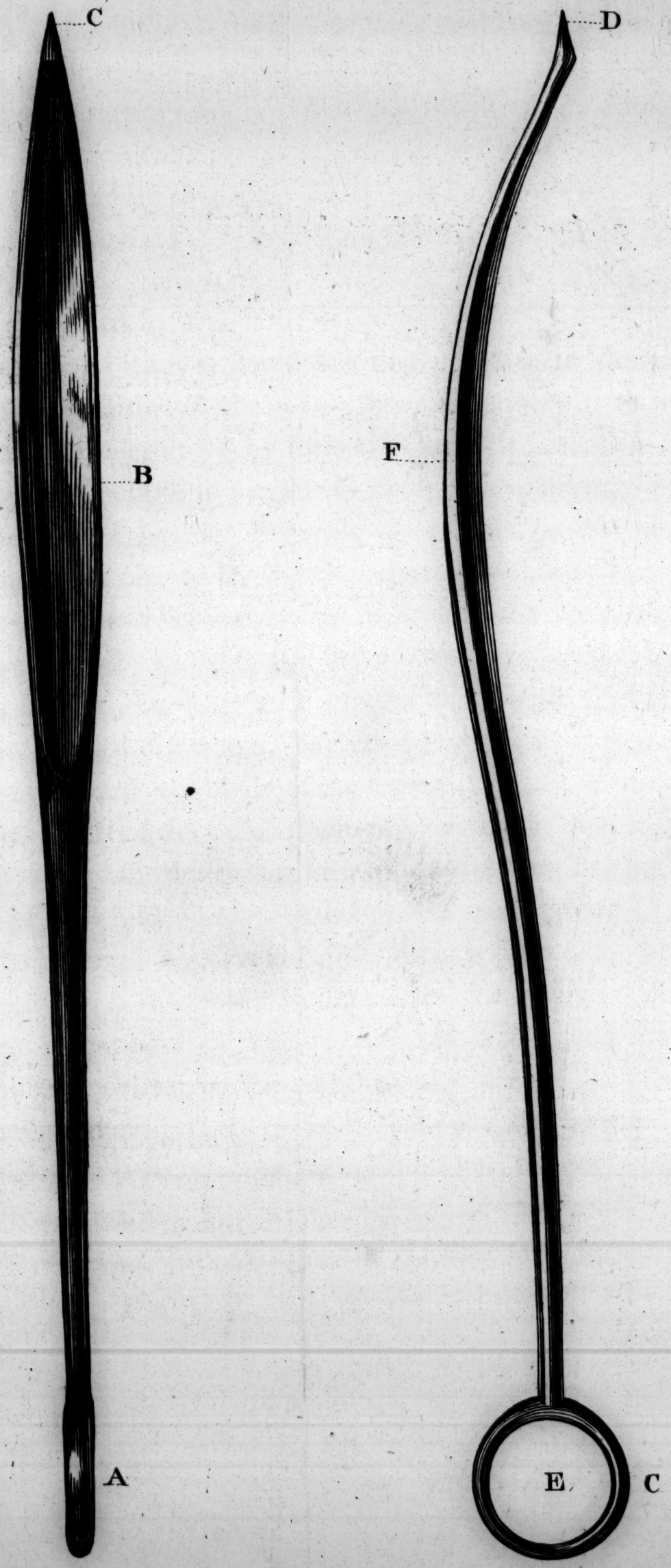
When the ſuperior ſtrait is found leſs than the fourth dimenſion, the caſe admits of neither doubt nor delay; the delivery is to be obtained by the embryulcus; or by ſuch kind of help, as ſoon as the orifices are opened enough to permit it; except the paſſage proves ſo narrow as the ſixth dimenſion, or nearly ſo; if this be the caſe, the mother has no other chance for life than that of hyſterotomy.

But, in the firſt examination, if the ſtrait be found wider than the fourth dimenſion (the more ſo the better) the hand muſt be paſſed through the os uteri, as ſoon as it can be done with ſafety; then formed into the third dimenſion, and placed as before, that is, with the fore finger towards the angle of the ſacrum, and the little one towards the ſymphyſis of the pubes; which being done, if the ſtrait is found leſs than the laſt dimenſion, he muſt carefully endeavour to find out the ſize of the child's head: if this proves ſmall, there is a probability of its paſſing; but if it be large, there is little or no hopes of its being born alive. However, in both caſes, he may wait till he is truly convinced that nature is unable to do the work; and then with propriety he may deliver by the embryulcus.

Upon the laſt inveſtigation, if the ſtrait be found fully equal to the third dimenſion, it is beſt (in my humble opinion) to proceed and deliver as directed in Chap. IV. provided the child can be eaſily turned. If the pelvis be wider than this dimenſion, the more ſo the better, the operation will not only be eaſier for the operator, but ſafer alſo for

mother

Plate VII.



mother and child: but in all caſes where it is leſs than the third dimenſion, I cannot recommend turning, as I think the head muſt be in danger of being left behind.

§. III. Now what regards the child, though it often is of the greateſt moment to know whether it be alive or dead; yet nothing in the obſtetric art is more difficult to diſcover. Many authors have wrote upon the ſubject. All that I have been able to learn hitherto, by the cloſeſt attention, proves little more than what hath been ſaid by thoſe gentlemen: nevertheleſs, what I know from experience to be true, I will venture to relate.

Signs which give ſuſpicion of the child's being dead.

Patients, whom I have known to have their infants die in the womb, were generally ſeized with coldiſh chills, at the time when the child might be ſuppoſed to have ſickened; ſome only a few days before labour, and others ſooner. Theſe chills became ſtronger, as the child grew weaker, even ſo much, that at its death (which uſually happened a few days, ſometimes more, before the birth, as could be judged by the degree of putrefaction) to reſemble the fit of an ague.

From the firſt attack, there was a gradual decay of appetite, they were thirſty, ſlept badly, turned in bed with much difficulty; the breaſts became leſs and flaccid, and ſometimes milk run out of the nipples.

Their bowels were much diſordered from the time of the child's death; they generally felt a continual coldneſs, and uneaſineſs in the whole abdomen; and a conſiderable pain in the umbilical region.

Their labour came on in a lingering and very untoward manner; and, during its whole courſe, they were more languid and unweildy, than is uſual in other difficult births. When up, they were unwilling to lie down; when in bed, loth to turn or to riſe again.

Theſe, indeed, are common to ſome who are worn down with the fatigue of any kind of birth.

But when the child was dead, they were more ſo: and as they turned, their bellies always fell in a looſe manner, to the ſide on which they lay; they were alſo uncommonly prominent at the navel, and hollow at the flanks. As to the abdomen's feeling colder than the reſt of the body, I have not as yet obſerved it; I rather think (as by experience I am taught to believe) that women, in thoſe caſes, have leſs vital heat than whilſt their children are alive; conſequently their whole bodies muſt feel colder than the natural ſtandard; and this in proportion to the degree of their weakneſs. But to return; they alſo complained of an uncommon ſoreneſs in the whole abdomen, more eſpecially in the umbilical and hypogaſtric regions, both whilſt the pains were on and off. The membranes broke ſoon, the liquor amnii was fœtid, very dark coloured, and uſually but ſmall in quantity. Their countenances were generally pale and dejected, with ſometimes a darkiſh fluſh in the cheeks, and the ſkin appearing more or leſs of a cadaverous colour; the pulſe was low and quick; the breaſts were always ſoft and extenuated; the pains were ſlow and ſhort, and had but little force, though they complained bitterly of their being extremely ſharp, and hard to be endured. The os uteri opened very ſlowly, the head conſequently advanced ſo, and the bones were commonly more looſe and yielding than is uſual when the child is alive; nay, ſome were entirely ſeparated, and felt in the ſcalp like ſhells in a bag. In theſe caſes, the upper part of the head made a large and yielding tumor in the vagina; but the baſis of the ſkull was generally held ſo faſt in the os uteri, as to retard the birth. Some caſes I have met with, where the head has remained ſome time at the brim of the pelvis; during which time, a large quantity of the meconium has been diſcharged; and then, when the child

came

Fig. 1.

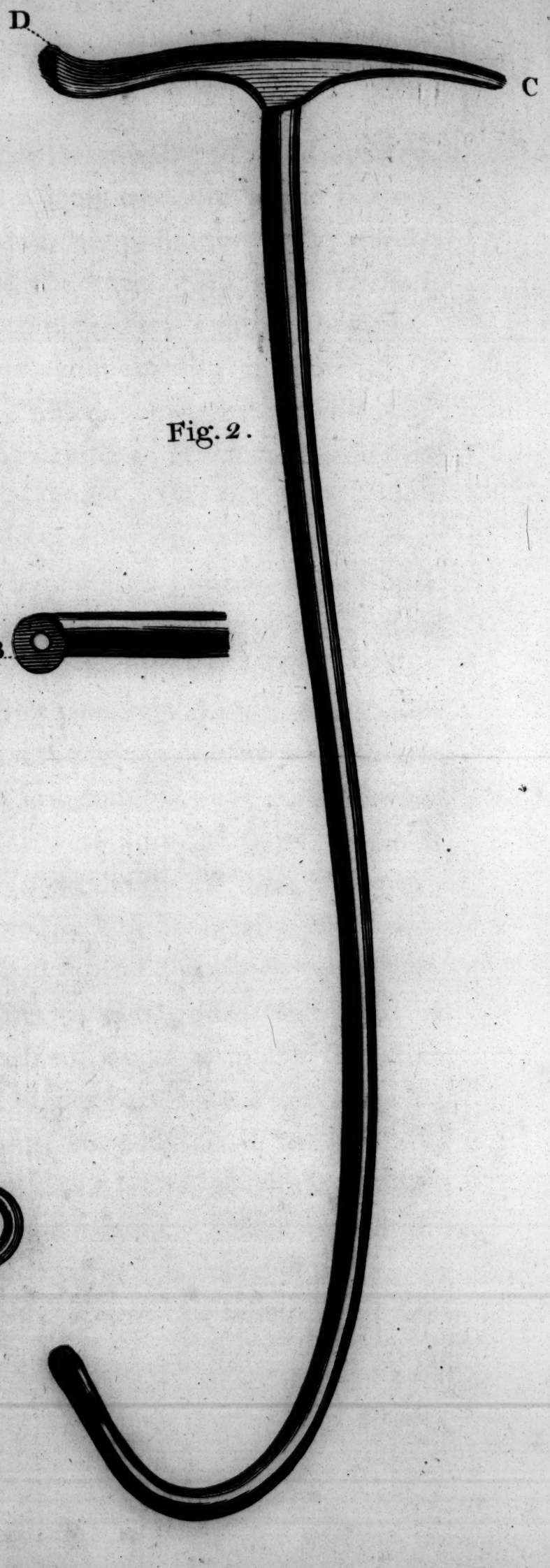



Fig. 2.

Fig. 3.

Fig. 4.

came forth, it appeared to have been dead ſeveral days before the labour.

In others, and indeed moſt of thoſe where the child has been long dead, putrid air has ruſhed from the cavity of the uterus, making a crepitus or ruſtling noiſe, and its ſteams ſo extremely noxious, that with much difficulty I have kept from fainting, whilſt I was engaged in the operation. As to the ſeparation of the hairy ſcalp, I have never yet met with it, although I have extracted many children whoſe cuticle hath been detached in ſeveral places; whoſe bodies and ſecundines have been very livid, and even ſo extremely rotten, as to break in pieces in the birth.

In all caſes where the navel-ſtring has been prolapſed above half an hour, now cold, flaccid, and without pulſation, whatever other part of the body preſented, I have always found the child dead.

Though theſe ſymptoms attend caſes where the child is dead, I muſt, nevertheleſs, acquaint the ſtudent, that many of them do happen, and yet the child comes forth alive; but then it is obſervable, that ſuch children have uſually a cadaverous aſpect, are generally ſickly, and not uncommonly die in the month, or ſoon afterwards; their ſecundines alſo have generally a fœtid ſmell and livid colour.

Notwithſtanding all this, I neither do myſelf, nor will I adviſe others to rely on any more of thoſe ſigns than three, namely; firſt, when the bones of the ſkull are ſeparated, and may be felt like looſe ſhells in a bag, this will ſoon happen when the child is dropſical. Secondly, when the hairy ſcalp peels off; in which caſe, the bones alſo will moſt likely feel looſe. And thirdly, when the funis has been down above half an hour, is entirely without pulſation, and become cold and flaccid. Certain ſigns of the child's being dead.

As ſo few ſigns can be depended on, it may probably be aſked, why ſo particular concerning thoſe which are doubtful? My reaſon is, that in caſes where ſuch happen, if the mother, in the courſe of her labour,

labour, ſhould happen to be in danger by any ſupervening incident, the operator then need not be under ſo much difficulty with reſpect to the child, as if no ſuch ſigns had happened; but attend to the mother, whoſe life muſt always be preferred to that of the other.

When it is, therefore, known by the three ſigns above-mentioned that the child is dead; when the pains are not forcing, but feeble, and the patient's ſtrength ſo likewiſe; when the head has deſcended into the pelvis, and the orifices are ſo opened that the operator can eaſily paſs his hand; I ſay, rather than the patient ſhould be ſuffered to undergo a tedious and laborious labour, ſhe had better be delivered by the embryulcus.

§. IV. As thoſe caſes which ariſe partly from the mother, and partly from the child, may be diſtinguiſhed alſo by what has been already obſerved; I ſhall now proceed to deſcribe the operation.

Firſt then, care being taken that the bladder and rectum are emptied, the patient may be placed as for natural delivery (and remain ſo during the operation, unleſs ſome great difficulty renders it more convenient to have her lie in the poſition as for preternatural parturition.) The operator muſt now inſinuate his left hand into the vagina, with the tops of the fingers within the os uteri, and cloſe to the apex of

The manner of applying the director.

Plate VII. Fig. 1 and 2.

that part of the head which preſents; then take up the perforator (or director) with his right hand, and ſlide its point C D, grooved ſide B F, along the palm of the left hand, and the ſulcus formed by the juncture of the middle fingers, till it arrives at the apex, or a little to one ſide of it, through which it muſt be forced into the head. If the bones prove ſo firm as to reſiſt the point, he muſt bore a little as with a terebra, and then it will penetrate.

The manner of applying the embryulcus.

When it has paſſed as far as the broadeſt part B of its groove, the handle A C E, muſt be moved off a little from the flat of the hand, and then he muſt take up the embryulcus with his right hand, and

paſs

paſs it between them, with the convex ſide D of the ſwivel to the hand, and the point C along betwixt the groove of the middle fingers, and that of the director, till it gets to the perforation, through which it muſt be puſhed, till it is entirely (or nearly ſo) within the head. This being done, the director muſt be withdrawn and laid aſide. Plate VIII. Fig. 1.

The ſwivel being now wholly in the head, the fingers muſt be kept cloſe to the outſide of the ſkull, betwixt the end D, and the ſhank E B, whilſt the handle is pulled back, whereby the ſwivel will turn acroſs within the head, like B C; upon this it muſt be moved about till the ends are towards the ilia, or wideſt part of the pelvis, in order to prevent their ſtriking againſt the pubes when he begins to extract. How to turn the ſwivel. Fig. 2.

Having thus obtained a good hold, he muſt now wait for the aſſiſtance of pains (if they are at all to be depended on) and extract (though cautiouſly) whilſt they are preſent; the direction (eſpecially if the head is high) being firſt towards the coccyx. How and when to extract.

When the extracting force is applied, the left hand muſt always be kept againſt the outſide of the ſkull, and as the head is brought through the os uteri, if this be not dilated ſo much as to permit the ſwivel to come through it tranſverſely, the point C muſt be preſſed a little back, by which obliquity, the fingers being ſtill on the outſide of the head, oppoſite to the end D, and the thumb between that and the ſhank, he may then extract with ſafety. How to bring the head through the os uteri.

When the eductor, and part of the child's head have come through the os uteri, the ſwivel may be turned tranſverſely again; and then he may extract as before, till they arrive at the os vaginæ, where the ſame care muſt be taken as when they were brought through the os uteri. How to bring it through the os vaginæ.

The upper part of the child's head being thus conducted to the outſide of the os vaginæ, the end D, of the ſwivel muſt be turned to the anterior part of the pubes; by which poſition, the extracting force

may be directed forwards in that courſe which is obſerved by nature; and the other end C, conſequently will fall back obliquely, ſo as not to force the head too much upon the perinæum.

If the perforation is made in one ſide of the apex, and he finds a conſiderable reſiſtance to the force which is applied, the end D muſt be turned acroſs behind it; for this apex is the part where the extracting force being applied, the head will readily come forwards, until it is entirely without the orifice; then the embryulcus may be taken away, and the delivery finiſhed as in the preceding chapters. When the ſcalp, bones, and meninges are ſo firm as to ſuſtain the hold of the eductor, this whole operation may be eaſily performed in leſs than ten minutes. Nevertheleſs, I think it is better to let the time be longer, that the head may dilate the orifices as gradually as the nature of the emergency will admit of.

How to act when difficulties ariſe.

§. V. In ſome caſes, difficulties ariſe which I muſt here take notice of; and, at the ſame time, point out the method which I have found to be the moſt effectual. They happen when the pelvis is ſo narrow as to cauſe a very great reſiſtance to the force which is required in extracting, or when the ſkull and meninges are ſo brittle as to break and tear into pieces.

In both caſes, when the firſt hold gives way, the ſwivel muſt be ſhifted round in the head; and the left hand, as directed before, kept always oppoſite to it, on the outſide of the ſkull, whereby a ſeparation of the parts will be ſometimes prevented; and if the hold comes away entirely, the hand being thus placed, will guard the inſtrument from ſtriking againſt the patient.

Care to be taken when the bones ſeparate.

When a ſeparation happens, the bones, as they become looſe and detached, muſt be carefully taken away, ſo that no hurt may enſue from their ſharp edges and angles. This may be done by the hand, after which, he muſt endeavour to paſs the end of the ſwivel behind the falx

falx of the brain, in order to entangle that and a part of the meninges alſo, by twiſting the inſtrument about; which being done, a hold will ſometimes be obtained, whereby the head may be brought forth.

When the eductor muſt be uſed as a crotchet. Fig. 1.

But if this fails, he muſt turn the embryulcus, lay hold of the ſwivel end, paſs the handle A along the face, and fix its point B either in one of the orbits, on the root of the mouth, or under the chin; which being done, the left hand muſt be placed in the paſſage, againſt that ſide of the head which is oppoſite to the inſtrument, whereby the head will be kept ſteady betwixt them in the centre of the pelvis. So that when the extracting force is applied, the child will be brought along, though the reſiſtance be very great.

When the help of a fillet becomes neceſſary, and how it is to be applied.

Should a caſe occur (which I think can but rarely happen) where the baſis of the ſkull cannot be brought through the os vaginæ by this inſtrument, there is ſtill another reſource without either hazard or hurt to the patient, and not a great deal of trouble to the operator, viz. a fillet or ſilk belt, about an ell long, with the two ends joined together by a knot. This fillet may be uſed as follows:

The nooſe (or part oppoſite to the knot) being paſſed through the ring B of the eductor, the operator muſt then place it round the fingers of his left hand, and ſuſtain it there by the top of the thumb. In this manner, they muſt be paſſed up to one ſide of the child's head, and the handle of the eductor along the other ſide as high as the neck; when he muſt open the duplicature or nooſe, by ſpreading out the fingers and thumb; then work or ſlide it over by degrees upon the head.

When it is round the head, and the ring of the handle is as high as the neck, the fillet may then be extended a little, by taking hold of the knotted end, whereby the nooſe will be raiſed towards the neck; the ring here ſerving as a pulley. The nooſe muſt be moved ſtill higher by the fingers, which are within the vagina; and when it is

got over the baſis of the ſkull, the knotted end muſt then be pulled tight, and now the nooſe will ſlip upon the neck, and encompaſs it ſtrictly; this being done, the extremity or knotted end of the fillet, muſt be rolled tightly about the ſwivel, and then the operator may extract with ſafety, as well as with ſufficient efficacy.

Though I have (to avoid a multiplicity of inſtruments, as much as I can) deſcribed how this fillet may be uſed by the embryulcus; yet, I muſt own, there is a probability of applying it better by help of a blunt crotchet, which I invented lately; but as I have not had occaſion to uſe it for this purpoſe, I cannot recommend it from experience.

In order to make the application this way, the fillet A B C D, muſt be diſpoſed on the crotchet E F G H I K, as it is repreſented by Fig. 7. Plate IX. Then the operator muſt place the thumb of his left hand and three of the fingers, viz. the middle one, the ring one, and the little one, between the crotchet at G, and the fillet at C, and the fore finger upon the outſide of the point F, ſo that this part of the crotchet may be held between the fore finger and the middle one, whilſt he paſſes it up through the pelvis, to get beyond the baſis of the ſkull.

This being done, that part F G of the crotchet, muſt be kept cloſe to one ſide of the child's neck, whilſt the fillet at C D E, is kept at a diſtance from it, by ſpreading out the thumb and fingers; and then it may be ſhoved by degrees over the baſis of the ſkull. The crotchet being ſtill held by the left hand, between F and G, the end A of the fillet muſt be pulled tightly by the right hand, whereby the other end of it, which envelopes the ſhank of the crotchet B, will ſlide up to G, or higher if required, until the part which is to be taken hold of is ſufficiently environed.

In this caſe, he may either extract by the fillet alone, or by both together, the outer end of the fillet being rolled about the crotchet at K,

K, whilſt with his left hand he guides the baſis of the ſkull through the vagina, to prevent its being hurt by any angles or edges of the bones.

Should this method be uſed to bring down a foot, as directed in Chap. IV. all poſſible care muſt be taken not to injure the ankle, either bypreſſing it much by the crotchet, or compreſſing it violently by the fillet.

How to act when the body is diſtended with air or water, &c.

If the child's body is diſtended with air, or water, &c. cauſing ſuch an obſtruction, as to threaten a ſeparation of the neck alſo, the handle of the embryulcus may be cautiouſly paſſed up, and fixed on either of the axillæ, in order to bring down a ſcapula; which being done, the delivery may be effected. In doing this, however, the point F muſt be kept back from the pubes, ſo that it may not hitch upon that bone as the extracting force is applied. Plate VIII. Fig. 1.

When the neck ſeparates.

Should a ſeparation of the neck enſue, leaving the body of the child entirely above the brim of the pelvis, the beſt method I can think of, (and I am joined in the ſame opinion by a practitioner of great experience) is to paſs up the hand and bring down the feet. But then, if there be any ſharp points or edges of bones, where the ſeparation happened, they muſt be removed as carefully as poſſible, leſt the uterus be hurt as the body is turned round. Theſe particulars being obſerved, and the body extracted till the abdomen arrives within the pelvis, if the ſwelling is ſtill ſo great as to prevent its coming wholly forth, the perforator muſt be conducted cautiouſly in the hollow of the operator's hand, as directed in §. IV. till its point is cloſe to the child's abdomen, into which it muſt then be paſſed, to give vent to the air and humours, which being done, the delivery may be finiſhed.

In caſes where the ſuperior ſtrait of the pelvis meaſures only about two inches, the uſe of the embryulcus, as above directed, may perhaps appear to ſome not ſufficient for the work. I muſt own, that a pelvis ſo narrow as this, has not occurred in my practice; yet, when

I conſider the method which Dr. Kelly uſed, I cannot but think it would be adviſeable in ſuch caſes to apply the embryulcus, as ſoon as the orifices are ſufficiently opened for the purpoſe; and extract a while with due caution. For, though the bones of the cranium will looſen, and the holds give way, in caſes of ſo great a reſiſtance as here muſt be expected; yet, by the uſe of the director and embryulcus, the texture of the brain will be broke, and ſome of it diſcharged; and, by the extracting force uſed, the head will be lengthened, and the diameter of its thickneſs diminiſhed; conſequently, when the looſe bones are carefully taken away, and a reaſonable time allowed afterwards for nature to make her utmoſt efforts, the remainder of the head will then be moulded or prepared for its paſſage: ſo that if either the handle of the embryulcus, or the blunt crotchet (Plate IX. Fig. 7.) be properly applied, the delivery may be effected.

I prefer theſe inſtruments to ſharp crotchets; becauſe, having no ſharp edges, and their points terminating in rings, they may be turned about in the uterus, if required, till they can be properly applied; and, when fixed on the child, they will not tear away the hold ſo readily as ſharp ones; conſequently their uſe will be attended with leſs danger to the mother. I will allow, however, that their efficacy may appear doubtful in one caſe; that is, when the body has been extracted firſt, and the head remains ſo firmly fixed above the brim of the pelvis, as not to come forwards by manual aſſiſtance only. In this caſe, neither the blunt crotchet, nor the handle of the embryulcus can be properly fixed. But a ſharp crotchet being paſſed up to the crown of the head (as Dr. Smellie directed) will fix, and penetrate the ſame: ſo that when the extracting force is applied, the hold will give way, and make an opening, through which a part of the brain will be evacuated; hence, the head, being now leſſened, may be brought away. Beſides this method of extracting by the common crotchet, Dr. Kelly has told me of one, which, I think, deſerves our notice, as he has uſed it with ſucceſs. It

It is this; the under jaw being preſſed down, let an opening be made by the ſciſſors quite through the os palati to the brain; then paſs a blunt hook through this foramen, and fix it upon the baſis of the ſkull; which being done, the head may be extracted.

Now this method appears to be much more elegible, than that of paſſing a ſharp crotchet into the cavity of the uterus; yet, as ſuch an opening can be made with ſciſſors as will allow an application of a hook, I have hopes that the perforator and embryulcus may be uſed here, with even more advantage than either the ſciſſors, ſharp crotchet, or hook. But to return;

In all caſes where the child preſents right, and yet cannot be ſaved, I think waiting to let nature make her efforts, after the head is opened, as Dr. Kelly did, in the caſe above-mentioned, is rational practice; and therefore, if any operator ſhould not like to open the head with the perforator, and extract a while at firſt by the embryulcus, as I have hinted, I would have him only open, and wait ſo long as it can be done with ſafety to the mother; but then I think this opening may be better made by an inſtrument ſaid to have been invented by Dr. Orme, than by Dr. Smellie's ſciſſors, as commonly uſed.

How to extract the head when left behind the body.

Laſtly, Should the operator be called to a caſe where the body has been extracted, but where the neck having ſeparated, the head is left in the uterus, he muſt paſs his hand, and endeavour to introduce a finger through the foramen magnum, in the baſis of the ſkull; which being accompliſhed, he muſt bring it to the brim of the pelvis, with the face towards one ilia; and, whilſt an aſſiſtant makes a preſſure, gently with both hands, on the outſide of the abdomen juſt above the head, he may then extract, for by this method ſome have ſucceeded.

But if this is found to be impracticable, he muſt then endeavour to paſs the ſwivel of the embryulcus through the foramen, whilſt an aſſiſtant

assistant keeps the head down, as above directed. If the swivel can be got through, and then turned transversely, the hold will be so firm that he cannot be foiled, provided he extracts according to the cautions and directions given.

Plate IX. Fig. 7. But if the foramen is so small as not to admit the swivel, the handle A (or one end of the blunt crotchet) must be fixed on any part where a hold can properly be taken.

If there is occasion to open the head, it must be placed with the crown or vertex towards the center of the pelvis, then kept down by an external pressure, as above directed, whilst the operator passes his left hand, and applies the perforator.

When the head is opened, he must always take care that the uterus be not injured by the sharp edges or angles of the bones; and then extract either by the instruments above recommended, or by the common crotchet, as the operator finds most safe and convenient. Though to speak my mind freely, I would never have the sharp crotchet used, unless it be in the hands of an experienced operator, and then only in such cases of difficulty as have now been mentioned.

CHAP.

## CHAP. IX.

## OF HYSTEROTOMY.

WHEN parturition could not be effected through the natural paſſages, either by nature or by art; or when a woman died undelivered in the latter months of pregnancy, an operation by the Greeks, called Hyſterotomia, and by the Latins Sectio Ceſarea, was recommended; and likewiſe performed in different nations. It conſiſted in making an inciſion through the mother's abdomen and uterus, extending about ſix or ſeven inches in length, obliquely between the navel and ilium. Whether this operation was ever ſucceſsfully performed on the living ſubjects amongſt the ancients ſeems uncertain; but it is poſitively aſſerted to have been done with ſucceſs ſeveral times by the moderns, in different countries of Europe. Having however not ſeen it performed, when this work was firſt put to preſs, I conſulted Dr. Hunter and Dr. Mackenzie, and Meſſ. Ranby and Middleton, who all aſſured me that they neither had ſeen nor heard of its being done in London, either in their time, or in that of their acquaintance, who had been in practice above forty years before them; ſo that an inſtance of it had not happened in a city which contained above a million of people, during ninety years and upwards. On this account I did not then give any deſcription of it, but referred the reader to Heiſter and Smellie. Since that time, I am very ſorry to find that it has been performed ſeveral times in different countries, without ſucceſs; and that, Mr. Sigault, and other eminent practitioners in France, have ſet on foot the diviſion of the ſymphyſis pubes as a ſubſtitute for it. This practice alſo being found, not only much more painful, but in every other reſpect attended with as ill ſucceſs as the former, is, ſo far as I know,

very

very juſtly exploded. Thoſe events are undoubtedly very diſcouraging! But ſhall we therefore abandon Hyſterotomy? and leave ſuch unhappy women as cannot be delivered by any other diſcovered means, to certain miſery and deſtruction! No, let us rather endeavour ſtill to improve it; and, although it may not be allowed to any one to go far; yet new means may be found to produce better effects.

§. II. In my firſt edition, I gave, by a note, the opinion of my late friend, Dr. Hunter, concerning the place where he thought beſt for making the external inciſion upon, viz. along the linea alba, the bladder being firſt emptied, as thereby the branches of the hypogaſtric arteries would be avoided, and the inteſtines no obſtruction to the operation. I now find by Dr. Hamilton's account, in his Outlines of Midwifery, ſecond edition, Page 347, that Profeſſor Monro, at Edinburgh, has deſcribed in his lectures Hyſterotomy, in a manner, which ſeems to me, ſo accurate and judicious, that I ſhall here tranſcribe it in his own words:

" By this operation, is underſtood an inciſion made firſt into the " cavity of the abdomen, and then into the uterus, in order to extract " a fœtus. If the perſon on whom we are to perform it has been " killed by an accident in the laſt month of pregnancy, or has died of " a fever, we need not be very exact about the inciſion, but muſt " make it as quickly as poſſible. If however we are to operate on a " living perſon, we ought not to attempt the operation, if ſhe has " ever on any former occaſion been delivered of a child; for that is a " ſure proof that the natural opening is ſufficiently large. Even if the " os uteri be not fully dilated, it will be better for the patient to have " it delated forcibly, than to have this operation performed, which is " attended with the moſt imminent danger."

" Next we ought ſtrictly to examine the ſtate of the bones and of the " ſoft parts, leſt we imagine that the bones prevent the delivery; when

" when perhaps the ſoft parts only may be in fault. We may alſo
" preſume that there is a ſufficient wideneſs in the bones of the pelvis,
" if the patient is not obſerved to have deformity in the other parts of
" the body, as a deformity rarely occurs in the pelvis without rickets,
" or a curvature in the ſpine; though in a few caſes this may happen.
" But after all theſe circumſtances have been attended to, and theopera-
" tion is determined, next let us conſider the proper ſteps to be taken in
" it. We firſt empty the inteſtines, the rectum, and veſica urinaria,
" that the patient may not be diſturbed too ſoon after the operation,
" and that the ſize of the bladder may not interrupt it. We then lay
" the patient in an horizontal poſture, that the inteſtines be not puſhed
" down between the abdominal integuments and uterus. In making
" the inciſion, we muſt avoid the large arteries in the containing parts.
" If it were to be extended far outwards, conſiderable branches of the
" circumflex might be divided; if inwards, the epigaſtric; ſo the beſt
" place is between the recti muſcles, or upon the outſide of the rectus.
" The laſt place is moſt frequently preferred, and we there readily get
" into the uterus. By this means, indeed, the uterus muſt be divided
" towards its ſide, where the veſſels enter and are moſt conſiderable;
" but we chooſe the outſide of the rectus, becauſe of the veſica urina-
" ria being in danger of contracting inflammation from the inciſion.
" Except the danger of wounding the ſmall turns of the inteſtines,
" there is no great difficulty in performing the operation; yet ſeveral
" cautions are to be obſerved. Operators have not been aware of the
" cauſes of the danger; and we have more favourable accounts of the
" operation than we ought to have. We ſhall find in practice, that
" we ſhall be more frequently diſappointed than we could imagine
" from the reports of authors, who have only mentioned the fortunate
" caſes. In this City the operation has been performed five times, and
" always without ſucceſs, tho' ſome of the women, before the operation
" were in ordinary health. The great danger, I am perſuaded, ariſes

" from the admiſſion of the air, as well as from the parts divided; and
" I have repeatedly found, in making experiments upon animals, that if
" the air was let in upon the abdominal bowels for a few minutes,
" without any farther injury, the animal often dies; and always re-
" covers with the utmoſt difficulty: And this ſtill more readily hap-
" pens, if a conſiderable quantity of red blood be extravaſated within
" the cavity, which produces a moſt violent inflammation. Therefore the
" ſurgeon is not to go at once into the cavity of the abdomen; but
" ſhould firſt divide the ſkin and muſcles, and leave the peritoneum
" entire until the bleeding from the veſſels has entirely ceaſed; the
" danger in that way, I find, is very much leſſened. We then open
" the peritoneum, making firſt a ſmall inciſion, and obſerve if the uterus
" is contiguous; if it is, we divide it with caution, and the aſſiſtant,
" by making a moderate preſſure, hinders the air from getting into the
" general cavity of the abdomen. The diſcharge of blood from the
" uterus is ſmaller than we would expect. We then cut the menbranes,
" ſeparate the plecenta to extract the fœtus, diſcharge the waters,
" and as ſoon as the fœtus and ſecundines are removed, the uterus con-
" tracts of itſelf. Then let the ſurgeon paſs his hand into the cavity
" of the uterus, and with one or two fingers open the os uteri, that
" the blood, naturally diſcharging into the cavity of the uterus from
" the wound, may paſs readily out by the vagina. We then ſhut the
" wound; and, inſtead of leaving an opening for the diſcharge of mat-
" ter, we truſt to abſorption; for I conſtantly find, that a very cloſe
" future contributes to the cure: So I would ſew the containing parts of
" the abdomen with the glover's ſtitch, or interrupted ſutures, at three
" quarters of an inch diſtance, making the needles paſs through the
" ſkin and part of the muſcles, but not within the cavity, leaving the
" peritoneum entire; or, if there is a conſiderable effuſion of blood and
" water, let us ſtitch all but the under part, introduce into it a ſoft

tent,

" tent, and cover the whole with a compreſs. The patient is to be kept " on a ſtrict antiphlogiſtic regimen during the cure."

I am highly pleaſed with the above deſcription, and fully admit of its meriting the greateſt attention. Yet, humbly hoping that it may be judged excuſeable in any one, to throw out ſuch hints as may but even ſeem in a very ſmall degree uſeful to the preſent ſubject, I ſhall here offer what occurred to me lately on reading two caſes; one publiſhed by Profeſſor Hamilton, and the other by Dr. Andrew Douglas. The former of theſe two gentlemen, in his Outlines of Midwifery, Page 344, ſpeaking of a caſe, wherein he found the uterus had been ruptured by the child; ſays, " The uterus was ruptured at the ſuperior la- " teral part of the cervex; and the rent continued downwards to the " very edge of the os tincæ;—that he reduced ſome portion of the in- " teſtines, which had forced through the wound of the uterus, even " into the vagina;—That he had an opportunity of examining how " amazingly the rupture was diminiſhed by the contraction of the " uterus, ſoon after the extraction of the child;—That there was " a diſcharge of matter on the cloths from the fifth day, which gra- " dually leſſened;—and that her recovery was nearly as good as if no " extraordinary accident had happened."

Dr. Douglas, in his caſe, ſays, " The uterus ſeemed to have been " ruptured tranſverſely, on the *lower* and *fore part*, ſome diſtance above " where the vagina is connected with it; and it was more contracted " in its ſize than I thought poſſible, in the few hours which had elapſed, " ſince the accident. On the 12th of September, 1784, this woman " was delivered;—The hemorrhage was not greater than is uſual in a " common labour;—On the 15th ſhe had voided her urine freely and " regularly from the day of her delivery; but, having had no ſtool, the " Doctor very judiciouſly adviſed her to take a ſolution of cathartic ſalt. " —On the 17th ſhe complained of great ſoreneſs and pain from ilium " to ilium, her pulſe being at 100 with a degree of fullneſs, and an ap-

" pearance of a tendency to a delirium, he had her bled to eight ounces;
" and directed her to take ſmall doſes of the ſolution of the cathartic
" ſalt, with a few drops of laudanum every two or three hours;—On the
" 18th bad ſymptoms were abated; and her recovery was ſo remarkable,
" that on the 27th of October, ſhe walked above half a mile to the
" Doctor's houſe; on the 10th of January 1785, ſhe continued well;
" and, about a week after the menſes returned.*"

Now what occurred to me from contemplating the above caſes, and which I think applies to this operation, is as follows: I would have the inciſion made through the uterus, tranſverſely on its anterior ſide, as near the cervex as not to injure the bladder; avoiding as much as poſſible the diviſion of the larger branches of the hypogaſtric arteries: and, this aperture being made of a ſufficient largeneſs, then to paſs the end of a male catheter through a puncture made in the membranes to draw off the liquor amnii, &c. ſo that an effuſion thereof may not guſh into the general cavity of the abdomen. If theſe few particulars are adopted, and Profeſſor Monro's directions, in all other reſpects ſtrictly obſerved, I ſhould hope that better ſucceſs would attend Hyſterotomy. As to their practicableneſs, I have conſulted Mr. Hunter, and he admits them fully.

§. II. The mode of operation having been conſidered, it next follows to aſcertain, as far as we can, thoſe caſes, wherein the neceſſity of it becomes evident. In the laſt chapter, I hope, it appears, that the dimenſions of the pelvis may be taken by the operator's hand; and that I did admit the neceſſity of Hyſterotomy, whenever the paſſage proved ſo narrow as the ſixth dimenſion, or nearly ſo; that is almoſt an inch

* See his obſervations on an extraordinary caſe of a ruptured uterus. Page 19.

inch and a quarter. And, notwithſtanding all that has been advanced on this ſubject, I am ſtill of opinion, that, if there is not found an opening of the pelvis ſufficient for the admiſſion of two fingers, to guide and apply an inſtrument ſo effectually on the child as to extract it with ſafety to the mother, Hyſterotomy is the beſt chance to ſave her life.

Doctor Oſborne, in a Treatiſe on laborious parturition, has given a hiſtory of the caſe of a woman, whom he delivered by the crotchet, in the year 1776; and whoſe pelvis, if I miſtake him not, he confines to the following dimenſions;—the diſtance between the angle of the ſacrum and ſymphyſis Pubes, to only three quarters of an inch;—the aperture on the left ſide of the ſaid angle, in length to the ilium, about two inches and an half; and its width to only three quarters of an inch; The aperture of the right ſide to rather more than two inches in length; and in breadth at the middle about an inch and three quarters, from whence it became gradually narrower towards the ilium and projection of the ſacrum. "He ſays, I have endeavoured to demonſtrate, "that it (meaning the child) may be ſafely extracted by the crotch-"et wherever there is a ſpace equal to one inch and an half from pubes "to ſacrum; dimenſions much leſs than what have unvariably been "ſuppoſed to require the cæſarian operation, even in the lateſt and "beſt books.

Here I muſt ſuppoſe that the Doctor had never read what was ſaid in the preceding chapter, or that he did not think my book one of the beſt: But, taking it in either ſenſe, am happy his patient did well. I moſt ſincerely wiſh to avoid the leſſening of any one's merit; and am always ſorry when obliged to differ in opinion from any of my Profeſſion, more eſpecially ſo, out of reſpect to an eminent Lecturer on Midwifery; but, this point, ſeeming too ſerious a one to be ſilent on, I muſt declare, that I think Dr. Oſborne was miſtaken in his dimenſions of this woman's pelvis. Nay, although I have the happineſs

of hands as ſmall, and fingers as ſtrong as moſt men, and am not very unſkilful in mechanics, yet, *in a ſpace ſo narrow as he deſcribes*, I verily believe, that neither myſelf or any perſon of the greateſt judgment and expertneſs, could guide a crotchet, and apply it ſo well on the child, as to extract it with ſafety to the mother.

I lately aſked a very ingenious practitioner in midwifery, who did examine this woman before the Doctor began the operation, whether the dimenſions of the pelvis were taken as I had deſcribed in my book? to which he replied, that they were not to his remembrance: I then requeſted to know, how he and the other gentlemen who alſo examined her, could be certain that the pelvis was ſo ſmall as Doctor Oſborne had deſcribed? to which he very candidly anſwered, that to him and them it felt very narrow, but to affirm that it was exactly as the Doctor had ſaid, was more than he could do. But to return.

Some perhaps, notwithſtanding what has been ſaid, may think, that confining hyſterotomy to a ſpace within even two inches is too great a reſtriction; and it would be ſo, if ſuch latitude might be granted as ſeems to have been formerly taken: But this is not to be allowed, for there is too much reaſon to believe, that it was performed on ſuch as do not appear to have been either deformed, or of an under ſize, as for inſtance, ſeveral Queens: The caſe of Jane Seymour, Queen to King Henry VIII. of England, ſeems a proof of this. The neceſſity of having an heir to inherit Kingdoms, which were in danger of falling under a foreign power, has been urged as an excuſe for taking ſuch liberties with the lives of thoſe unfortunate Queens. I ſay unfortunate; for, had they lived now, I think it is more than probable, that under ſuch circumſtances, both their own lives, and thoſe of their children, would have been ſaved.

Beſides the caſe here treated of, there are others which require to be aſſiſted by an inciſion, whilſt the mother is alive; as for inſtance:

Firſt, when nature makes an effort to caſt forth an extra uterine fœtus, either through the parietes of the abdomen, or through the

anus

anus or perinæum, &c. eſpecially when attended by a ſuppuration, then an inciſion may be made according as the operator finds it moſt proper for the ſafety of the patient.

Secondly, When nature endeavours to bring forth an extra-uterine fœtus at the completion of pregnancy, by forcing it on through the pelvis, down between the vagina and rectum, an inciſion then being made through the inferior poſterior part of the vagina, or where the operator finds moſt convenient, would in all probability ſucceed much better than hyſterotomy*.

§. II. When

* Dr. Kelly has given us a caſe (ſee the London Medical Obſervations, vol. iii. page 44.) which explains this ſo well, that I ſhall beg leave to quote him.

"In the year 1756, I was deſired (ſays the doctor) by Dr. Crawford, to go with him to ſee a patient he had been called to three days before, who appeared to be in labour, and had been attended by a midwife three or four days, before he was ſent for.

"On paſſing a finger into the vagina, the head of a child was plainly felt, and ſo far advanced into the pelvis, that it ſeemed to require but two or three pains to bring it into the world; but, on a deliberate examination, the following peculiarities made the caſe appear quite ſingular.

"Firſt, Although the head was ſo far advanced into the pelvis, as to be but the length of a finger-joint from the fourchette, yet, the os tincæ was ſituated cloſe to the ſymphyſis of the pubes, and ſo high up, that it was very difficult to reach it; and, ſo far as this difficult acceſs would permit a judgment to be formed of the ſtate of this part, it ſeemed to be not at all dilated, and its labia, were more hard as well as more prominent than could be expected, as the woman thought herſelf arrived at the full time of pregnancy.

"Secondly, If the fore-finger of one hand was paſſed per vaginam, and that of the other per anum, the child's head was plainly felt, and even the ſutures diſtinguiſhed between them both; but, per vaginam only, no more than one ſide of the head could be felt, which was that ſide which pointed towards the pubes.

"Thirdly, On feeling the abdomen externally, the upper limits of it's tumefaction were not ſo regularly circumſcribed, as is uſual in the latter months of pregnancy.

"Theſe circumſtances maturely conſidered gave room to ſuſpect, that the child was not in the cavity of the womb. For although it often happens, that the head deſcends very low into the cavity of the pelvis, while the os uteri not only remains undilated, but likewiſe is ſituated ſo high up, that we reach it with difficulty; yet in theſe caſes the os uteri generally, if not always, points towards the ſacrum, whereas, in the caſe under conſideration, it was ſo cloſe to the pubes, that the finger was pretty much preſſed between that and the tumor made by the blood, before it could be reached.

"By the ſecond peculiarity, the head did very clearly appear to be got down between the poſterior part of the vagina and the anterior part of the rectum; for though there is no natural cavity there to receive it, yet it is well known, that theſe two membranous parts, which make the partition between one paſſage and the other, are connected together by a cellular membrane, which may very eaſily give way to the preſſure of any ſolid part protruding againſt it, with that degree of force, which the head of the child in this caſe did; eſpecially, as it was continued for ſo long a time as eight days, during which, the pains were ſtrong and frequent.

"There

§. II. When a woman, in the latter months of pregnancy, happens to die very ſuddenly, the child ſtill being thought to be alive, hyſterotomy is then commendable, provided it be known for certain that the

"There is naturally a deep ſort of cavity between the rectum and the back part of the uterus, made by the peritonæum, deſcending pretty low and forming a kind of pouch, in which a portion of the ſmall inteſtines, when the uterus is not pregnant, is commonly lodged; and, ſometimes, the inteſtines themſelves, by preſſing hard againſt the peritonæum, at this moſt depending part of the abdomen, gradually ſtretch this membrane ſo as to deepen this cavity much, and thereby diſſect, as it were, the back part of the vagina from the fore part of the rectum, and by theſe means form that tumor in the vagina, which is called a hernia vaginalis,

"In this caſe, the head of the child ſeemed to have produced the ſame effect.

"No circumſtance ſo ſtrongly indicated the head being in this ſituation, as that of not being able to paſs a finger between the tumor made by the head, and the back part of the vagina; for in every natural caſe, where the head is ſo far advanced into the pelvis, as it was in the preſent, even though the os uteri be not dilated, there is always a vacant ſpace between the tumor made by the head, and the back part of the vagina; but here there was none.

"The third peculiarity above-mentioned ſerved to corroborate that opinion of the caſe, which the firſt and ſecond gave riſe to; for, as the patient was a very thin woman, had the uterus been diſtended in the uſual manner, the circumſcribed border of its fundus might have been diſtinctly felt through the parietes of the abdomen.

"The friends of the poor woman, who were very preſſing to know why we did not deliver her, were given to underſtand, that we were afraid ſhe could not be delivered at all, as the child, inſtead of being in the womb, appeared to be in that part of her belly, from whence nature had provided no paſſage; however we promiſed to conſider of the caſe, and if it appeared practicable to relieve her by any method that might occur to us we would do ſo; but, for the preſent, could do nothing more than order ſomething to raiſe her ſpirits, and abate the ſeverity of her pain.

"As people are ſeldom unanimous in their opinions, when caſes of ſo uncommon a nature occur, we did not determine upon a method likely to ſucceed till too late to be put in practice.—She expired in the night of the ſucceeding day.

"The night after we had given the diſcouraging account of her caſe to the people about her, who little underſtood, and leſs believed what was told them; as the pains continued ſtrong, another midwife was called to her, who, upon examining, aſſured the patient, and all preſent, that ſhe would be delivered very ſpeedily, and ſhe hoped likewiſe, with all deſireable ſafety; and accordingly ordered what was neceſſary for the reception of the child to be got ready immediately. What ſerved to confirm theſe hopes was a ſmall red diſcharge, which ſoon after came on, and was regarded as a promiſing appearance; but this was produced by the midwife's having miſtaken the poſterior part of the vagina, againſt which the head ſtrongly preſſed, for the membranes, which ſhe endeavoured to break by ſcratching them with her finger nail.

"Theſe miſtakes were both natural, and perhaps excuſeable; and my ſole reaſon for mentioning them is to point out how near the birth the child's head ſeemed to be.

"Being informed of the fatal concluſion, we were very ſollicitous to know if our opinion of the caſe had been juſtly formed, and went to aſk the huſband's permiſſion to make the neceſſary enquiry for that purpoſe; he was gone out, and had left poſitive orders, that ſhe ſhould not be opened. After waiting a conſiderable time, expecting his return, and hoping to prevail over his prejudice by the reaſonable arguments made uſe of on ſuch occaſions, we at

the mother is dead. I ſay certain, for hiſtory gives an inſtance of this operation having been performed whilſt the mother was only in a deliquium; ſo that ſome difficulties ariſe even here: for ſuppoſing a ſurgeon

at laſt perſuaded the women, who were left in charge of the body, to permit us only to ſhew them, that the child was not in the womb, whereby both they and the huſband would have the ſatisfaction of knowing, that his loſs had not been owing either to negligence or ignorance.

"As this conſent was but faintly and with great reluctance given, and as we expected every moment, the huſband's return, who might treat us very roughly, for acting counter to the orders he had left, we did not make the examination with that deliberation and accuracy we could have wiſhed; however, we gained great ſatisfaction in regard to the principal objects of our enquiry. The diſcoveries made, on opening the abdomen, I ſhall relate in as conciſe a manner as their nature will permit.

"The uterus, inſtead of being the firſt and largeſt part in view, was but juſt raiſed above the os pubis, and had the uſual appearance of a womb in the unimpregnated ſtate. The cauſe of this ſituation was very apparent, as we found the head of the child ſettled quite low down in the pelvis, between the vagina and rectum, juſt as we expected; the head, in diſcending, had obliged the uterus to riſe above the pubes. The feet of the child reached very near the ſcrobiculus cordis, but were not viſible till the omentum and a large portion of the ſmall inteſtines were turned aſide. The child was not large, neither was it ſo ſmall as ſome children at the full time; the cuticle was entire, and there were not, either in colour, ſmell, or any other reſpect, the leaſt ſigns of putrefaction, by which we judged it had died much about the ſame time with it's mother.

"The placenta adhered moſtly to the peritonæum, on the right ſide of the abdomen, extending from the umbilicus to the ilium; and it's poſterior edge adhered to a part of the meſentary, it's inferior part was attached to the right ligamentum latum uteri, from whence it extended upwards towards the ribs. It was attached more firmly to theſe parts than the placenta in general is to the uterus; and in proportion to the ſize of the child, was twice as large in it's ſurface, as might have been expected.

"We ſhould have been extremely glad to have examined the appendages of the uterus, eſpecially the fallopian tubes; but our hurry and confuſion, from being ſo diſagreeably circumſtanced, prevented us; and we were too cloſely watched to take any thing away. Therefore we were not able to diſcover, whether or not the child had burſt one of the fallopian tubes, after being ſome time contained and nouriſhed therein, as moſt commonly happens with extra uterine fœtus's. But, from circumſtances, it ſeems moſt probable, that the ovum, when firſt diſengaged from the ovarium, had fallen to the depending part of the abdomen, without being received into the tube.

"The circumſtances which countenance this opinion, are principally theſe:

"In the firſt place, the woman had never been affected in that manner which women are, when one of the fallopian tubes is ruptured by the growth of an ovum detained in it's canal, ſuch as being ſuddenly ſurprized with a ſenſe of ſomething burſting within them, attended with violent pain, and a diſcharge of blood from the uterus. She had, indeed, her menſtrual diſcharge, but this was regular, in point of time, though deficient in quantity, eſpecially, in the latter months; ſhe had not been affected with any particular pains, 'till ſhe thought herſelf in labour. Her principal complaints, before that, were a great bearing down backwards, as ſhe expreſſed it, and a difficulty in going to ſtool.

"In the next place, the child was alive, and plainly felt to move, during the time ſhe ſeemed in labour: whereas, in caſes where the tube is burſt, I believe it commonly happens, that the child dies ſoon afterwards, and long before it has acquired it's full growth.

"And

ſurgeon in readineſs when the mother dies, will not the immediate performance of the operation appear indecent, if not cruel? And if he waits but an hour or two, will not the child be loſt? Facts evince, that children in ſuch caſes ſurvive their mothers but a very ſhort time. Some have affirmed, that they have ſeen the child move the day after the mother's death; but it appears from the obſervations of the preſent practitioners, that this is very rarely, if ever the caſe. However, if the mother dies ſuddenly, the child being felt lively juſt before; the placenta yet adhering, conſequently no flooding; and ſome degree of circulation being ſtill maintained between it and the child, the operation may be performed, I think, with propriety, as ſoon as it is certainly known that the mother is dead.

"And, in the laſt place, the attachment of the placenta to the peritonæum affords a very ſtrong preſumption for entertaining the opinion above-mentioned, for, had the ovum remained any conſiderable time in one of the tubes, it's vaſcular part or placenta, would have adhered to the internal ſurface of the tube, and, although upon the tube's burſting, the fœtus might have been diſengaged from it, yet the placenta would either have remained adhering to the tube, or would not have been attached at all to any part; but the adheſion (as has been already obſerved) was uncommonly firm. That the peritonæum was the part to which it did adhere is a fact we could not be deceived in, for, being an unepected circumſtance, it engaged our particular notice.

"It may not be amiſs to obſerve, that this ſituation of the placenta ſeems to corroborate the preſent prevailing opinion, that a fœtus in the womb is not nouriſhed by a tranſmiſſion of red blood from the mother to the child, but by nutritious juices abſorbed from the maternal blood by the placenta.

"I cannot help pointing out another particular relating to the placenta in this extraordinary caſe. I mean it's being ſo very large in proportion to the bulk of the child. Nature here furniſhed an inſtance of her care and attention; for, as the peritonæum, deſtitute of large blood-veſſels, cannot be ſo well adapted to the purpoſe of tranſmitting nouriſhment to a child, as the internal ſurface of the uterus, nature, in order to compenſate that diſadvantage, gave the placenta a much greater extent of ſurface than common, and thereby a larger ſcope for performing it's office.

"The only method that gave hopes of ſucceſs in the above caſe, was the making an inciſion through the poſterior part of the vagina, againſt which the head ſo ſtrongly preſſed, and which in conſequence of that preſſure was become extremely thin. The child might by ſuch means, have been eaſily extracted; and it is likewiſe very probable, that the placenta would, in time, have diſengaged itſelf and procured an exit through the ſame opening. But how ſoon, or how well, this aperture might have cloſed, and prevented a dangerous deſcent of the inteſtines, mere conjecture cannot determine.

N. B. This woman had miſcarried two or three times, but never went her full time before.

A NEW

# A NEW

# SYSTEM OF MIDWIFERY.

## PART IV.

### OF DISORDERS SOMETIMES SUBSEQUENT TO DELIVERY.

THE diſorders here meant, are floodings and faintings, after-pains, a ſuppreſſion of the urine, a diarrhœa, the milk fever, impoſthumations of the breaſts, a ſuppreſſion of the lochia, and a miliary fever.

Theſe complaints or diſeaſes being treated of in the order in which they are mentioned, we ſhall then ſubjoin a few obſervations concerning ſome diſeaſes to which the bladder and uterus are liable.

## CHAP. I.

### OF FLOODINGS AND FAINTINGS AFTER DELIVERY.

SOME women flood ſo much immediately after the birth of the child and ſecundines, as not only to bring on faintings, but the moſt imminent danger; eſpecially if their conſtitutions are naturally very lax, or much debilitated by ſome previous illneſs.

If there is a tolerable degree of ſtrength, an eaſy reſpiration, and a pulſe pretty firm, though quick, the hæmorrhage is not to be much dreaded, for it uſually abates in an hour or two. The patient, after being faint, falls into a doſe, and ere long the pulſe riſes, and not uncommonly becomes as full and ſtrong as if no ſuch loſs of blood had happened.

§. II. Nevertheleſs, in all ſuch caſes, whether the patient be ſtrong or weak, the abdomen muſt be immediately encompaſſed with a napkin properly folded, the ends being laid over one another, and pinned ſo tightly as to make a due compreſſion.

For this purpoſe, a girdle would anſwer better, if it could be always had in readineſs. What I mean is a ſlip of fine new flannel, about an ell long and ſeven inches broad; the edges are not to be hemmed; four (or more) buckles may be faſtened equally diſtant, about nine inches from one end; and as many ſtraps, about the ſame diſtance from the other; ſo that when this girdle is applied ſmoothly round the abdomen, the neceſſary compreſſion may then be made by buckling them tighter, as the uterus and muſcular parts contract.

The ſteams of hot vinegar may be applied to the noſe, a glaſs of wine may be given, and then the following draught; after which the patient muſt be kept as quiet as poſſible. R Con-

℞ Confectionis cardiacæ drachmam dimidiam,
Tincturæ thebaicæ guttas viginti,
Aquæ alexeteriæ ſimplicis ſeſcunciam,
——————— ſpirituoſæ,
Syrupi balſamici,
Singulorum drachmas duas.
Miſceantur, et fiat hauſtus ſtatim ſumendus.

Should the flooding continue very copiouſly, notwithſtanding theſe means have been uſed, cloaths may be dipt in cold vinegar, and applied over the loins and whole abdomen.

But if this be found inſufficient alſo (which but rarely happens) the operator muſt paſs his hand into the cavity of the uterus, and extract the coagulations with due caution and tenderneſs: for this being done, the uterus will have liberty to contract; conſequently the orifices on its inner ſurface will gradually cloſe, and the hæmorrhage abate; eſpecially if this contraction be aſſiſted by a compreſſion externally at the ſame time, not only by the bandage, but by the operator's hand, applied a few minutes directly upon the uterus.

It can hardly be ſuppoſed, that any objections will be raiſed againſt this method of relieving the patient by extracting thoſe coagulations which keep the uterus diſtended; but if any ſuch ſhould ariſe, I have this to ſay, that I am convinced of its propriety by its real ſucceſs. Therefore, if it be done when only abſolutely neceſſary, in order to ſave the life of the patient, as here meant, I cannot but approve of it; and I am joined in the ſame opinion by others of much experience.

CHAP.

## CHAP. II.

### OF THE AFTER-PAINS.

To parturition ſucceed thoſe ſpaſms in the lower part of the abdomen, which are attended with uneaſy ſenſations, commonly known by the name of after-pains. In this affair, the uterus is principally concerned; for, to regain the ſtate which it had before pregnancy, it contracts very quickly, eſpecially at firſt, as may be obſerved when there is occaſion to apply the hand on the outſide of the abdomen, in order to aſſiſt the expulſion of the ſecundines, &c. I ſay at firſt, for a few hours being elapſed, it contracts ſlower in proportion as the denſity of its ſtructure recovers; ſo that about the end of the third week it is uſually at a ſtand.

Though theſe ſpaſms are very natural at this time, yet they do not produce equally the ſame effects in different conſtitutions: becauſe ſome women feel but a very few pains, ſome have a moderate degree of them, and others are violently afflicted with them even during ſeveral days.

This difference may probably ariſe from the degree of irritability peculiar to each conſtitution; as alſo from ſome large thrombos, or from a part of the membrana decidua, &c. which, remaining in the uterus, increaſe the ſtimulation.

Now, whilſt theſe conatus uterini are moderate, the deſign of nature is anſwered; for thereby the uterus not only regains its former ſtate; but the contents, which ſerved to excite the ſtimulation, being excluded as the cavity of the uterus leſſens, the patient is conſequently ſo much relieved, as but very ſeldom to require any medical aſſiſtance.

But when they continue in a violent degree, ſome attention is neceſſary, for they not only diſturb, but retard thoſe diſcharges which at this time ought to to be encouraged.

In this caſe, care muſt be taken to keep the patient very quiet, and in as temperate and equal degree of warmth as poſſible; and to ſupply her properly with ſuch aliments as theſe following:

Barley water, oatmeal gruel, caudles, chicken, beef or mutton broths; and when the appetite begins to recover, ſome eatables may be allowed, eſpecially if the patient has a particular averſion to liquid diet.

As to medicines, ſedatives and ſodorifics are the means which commonly give the moſt relief; the following, therefore, are proper:

I. ℞. Mixturæ oleoſæ cum gummis ℥ij.
Tincturæ thebaicæ guttas xx.
Miſce, et fiat hauſtus ſtatim ſumendus, et 4ta vel 6ta, quaque hora repetendus, tinctura thebaica omiſſa.

In a ſhort time after this draught is taken, the patient is generally eaſy. This being obtained, if the perſpiration and the lochia require to be encouraged, then let the following draught, or a ſimilar one, be taken occaſionally.

II. ℞. Pulveris contrayervæ compoſiti ſcrupulum unum,
Aquæ alexeteriæ ſimplicis ſeſcunciam,
Tincturæ caſtorei,
Syrupi croci, ſingulorum drachmas duas;
Miſce, fiat hauſtus

If

If indurated fœces are collected in the rectum, ſo as to keep up the pains by preſſing againſt the uterus, &c. glyſters may be uſed at any time after the third day; for theſe do good, not only by their warmth and emolliency; but, upon their return, as the patient endeavours to exonerate the rectum by contracting the abdominal muſcles, if any thing is confined in the cavity of the uterus, it is uſually expelled, and then the patient is relieved.

But ſhould this lodgement of the fœces extend ſo high as not to be ſufficiently removed by the glyſters (which ſometimes is the caſe) then ſuch aperients as thoſe recommended in Part III. Chap. III. §. III. may be given, till the whole tube be freely diſburthened.

This being done, not only the uterus will be eaſed, but the circulation alſo through the whole viſcera.

It muſt be obſerved, however, that upon the uſe of aperients, or even of emollient glyſters, about the fourth or fifth day, a very copious flow of ſtools will ſometimes enſue. This happens moſt commonly when a collection of liquid fœces lie ready for being expelled at that inſtant; or when the patient is either of a lax habit of body, or of very irritable bowels.

This evacuation, however, is for the moſt part ſalutary, and ceaſes of itſelf in a few hours. But if it proves ſo great as to cauſe faintings (as ſometimes happens, probably from the preſſure being ſo ſuddenly taken off the viſcera) then a compreſſion muſt be made about the abdomen as ſoon as poſſible; and ſuch a draught adminiſtered as that directed in the preceding chapter; which being done, the patient will ſoon be relieved, and then recover as well as if no ſuch hurry had happened.

CHAP.

## CHAP. III.

## OF THE OBSTRUCTION OF URINE AFTER DELIVERY.

AN obſtruction of urine happens ſometimes not only after difficult births, but after very natural ones; the patient being healthy, and of a good form and ſize; and, as it hath appeared to me, ſome women are not ſo much ſenſible of it as others: ſo that, if care be not taken to give timely and proper relief, they are more liable to be injured; becauſe the bladder may be kept ſo long upon the ſtretch, as greatly to weaken, if not deſtroy its power of action. Beſides, the repletion of the bladder being ſo exceſſively great, will not the natural influx of the urine be retarded, the ureters, in conſequence, overfilled and diſtended? And will not the kidnies be affected alſo? I am inclined to think that ſuch inconveniencies may enſue.

In order, therefore, to guard againſt them, the patient ſhould always endeavour to evacuate the urine as ſoon after parturition as ſhe is able and never wait above ſix hours in expectation of an inclination to it. If twenty or thirty hours have been elapſed without relief, the catheter muſt be uſed in the manner deſcribed in Part II. Chap. III. §. III. and repeated once or twice in twenty-four hours, till the vagina, the neck of the uterus, and likewiſe the bladder have recovered themſelves. This, for the moſt part, will be effected about the fourth day.

The urine drawn off is uſually very high coloured, the more ſo the longer it is retained. If neglected forty hours, and the quantity exceeds three pints, the patient is commonly in great danger; eſpecially if, in the operation, the catheter is tinged of a blackiſh colour.

CHAP.

## CHAP. IV.

## OF THE DIARRHOEA.

IT is not unuſual to find a diarrhœa, or frequency of liquid dejections, attending the latter months of pregnancy, go off upon delivery without any medical aſſiſtance, and the recovery prove as perfect as if no ſuch illneſs had happened.

Nor is it uncommon for a woman, enjoying a good ſtate of health, to be ſeized with this complaint in the month of child-bed.

In the latter, however, it is not always ſo favourable as in the former, eſpecially when happening very ſoon after delivery; for, at this time, the patient cannot bear any large evacuation. Now, as ſome particular attention muſt be paid to this; and as ſuch an office comes moſt commonly to the ſhare of the obſtetrick practitioner, we ſhall offer ſome directions concerning it.

Cauſes.

The moſt common cauſes of this diſorder are, food not properly digeſted, a redundancy of the milk, or a flow of it upon the inteſtines, an obſtruction of the lochia, a ſurpriſe, or any violent agitation of the mind, &c. In order to diſtinguiſh theſe rightly, the preceding and preſent circumſtances of the caſe muſt be well conſidered.

When it ariſes from indigeſted aliments.

§. II. If meat (eſpecially ſuch as is not eaſily digeſted) has been eat very plentifully at any time within thirty hours after parturition, it is not unuſual for the patient to feel firſt an oppreſſion about the region of the ſtomach, and then pains in the bowels; ſucceeded on the following day, or thereabouts, with ſmall griping ſtools, which afterwards become more thin and copious.

Theſe circumſtances occurring, without any violent commotion of mind, or previous ill habit of body; the lochia continuing alſo in the uſual way, and the breaſts having an appearance of being repleniſhed with milk, it then may be concluded, that the diarrhœa is in conſequence of ſome crudities, particularly undigeſted aliments, remaining in the primæ viæ.

In this caſe, though the pulſe is ſometimes pretty quick, yet there is little danger, provided proper means are timely uſed. I ſay timely; for as this diſorder muſt continue whilſt the bowels are ſtimulated by thoſe acrimonious fæces, the curative indications are to cleanſe the inteſtinal tube as ſoon as poſſible; and, at the ſame time, to ſupport the patient with proper aliment, and other medical aid, leſt faintings quickly enſue, or the natural diſcharges be ſo greatly diſturbed, as to lay a foundation for future evils.

To effect this, ſuppoſing the diarrhœa comes on ſo early as the third day after delivery—(Before which time, I do not adviſe the uſe of purgatives)

I ℞ Salis cathartici amari drachmas ſex,
Aquæ menthæ piperitidis ſimplicis
uncias duas,
Spiritus lavendulæ compoſiti
drachmam dimidiam;
Miſceantur, et fiat hauſtus ſtatim ſumendus.

During the operation of this draught, the patient muſt take plentifully of oatmeat gruel, in order to repleniſh and cheriſh the inteſtines; the whole abdomen muſt be carefully compreſſed either by a napkin, or by the girdle, as mentioned in Chap. I. and about four hours afterwards, or when the operation of the medicine is ended, ſhe muſt take the following draught, or a ſimilar one.

℞ Confectionis Paulinæ drachmam dimidiam,
Aquæ cinnamomi tenuis feſcunciam,
Tincturæ Caſtorei,
Syrupi croci ſingulorum drachmas duas;
Miſceantur, et fiat hauſtus.

Now let the diet conſiſt chiefly of the following ingredients:

Boil ground rice in water to the conſiſtence of caudle, or rather thicker, a little cinnamon being added towards the end of the coction.
Then add a ſufficient quantity of double refined ſugar and white wine, to make it agreeable to the palate.

Of this aliment ſhe may take about half a pint, as often as her appetite requires; and if ſhe is thirſty, ſhe may drink intermediately a thin decoction of the rice. This method being purſued about twelve hours, without any return of the diarrhœa, the bowels remaining quiet and eaſy (as uſually is the caſe) ſhe may then have recourſe to chicken broth, and afterwards to meat, if ſhe deſires it.

In the former part of my practice, I uſually began the cure of this diſorder by a doſe of rhubarb. But of late years I have uſed the ſal catharticus amarus. My reaſon for preferring the latter to the former is, becauſe it has ſeemed, to me, to operate quicker and more effectually than the other, eſpecially whilſt the humours were very crude or acrid. Nay, I have known diarrhœas carried off entirely by one doſe of it, though they began with violence, ſome ſo early as the ſecond day after delivery. And, if I miſtake not very greatly, fevers alſo which attended, and even appeared threatening by their ſymptoms, have been nipped in the bud by this means.

However, if the primæ viæ are not ſufficiently relieved by the firſt doſe, the flux being ſtill troubleſome; ſuch a quantity of the ſalts

may be repeated on the third or fourth day, as ſeemeth ſuitable to the ſtrength of the patient, and other circumſtances of the caſe; or rhubarb may now be employed. During the immediate efforts of this doſe, the patient muſt be ſupplied firſt with oatmeal gruel, afterwards with the rice prepared as above directed, with only this difference, that red wine may be uſed inſtead of white. The abdomen alſo muſt be duly compreſſed; and then, as ſoon as the operation of the medicine is finiſhed, or even before, if the patient grows faint, the following draught may be given.

℞ Mixturæ oleoſæ cum gummi uncias duas,
Tincturæ thebaicæ guttas viginti;
Miſce, fiat hauſtus ſtatim ſumendus, et quarta quaque
hora repetendus, tinctura thebaica omiſſa.

By theſe means, the diſorder is moſt commonly carried off, unleſs it be kept up from another ſource than the one aſſigned. If ſo, the remainder of the cure will be underſtood by what ſhall be ſaid in the ſequel.

From the milk.

§. III. The diarrhœa, which proceeds from the milk, happens moſt commonly when the breaſts, after having been well filled, aſſuage. When it begins on the fourth or fifth day, without any previous illneſs, or any error committed in the uſe of the non-naturals, the perſpiration and the lochia going on well, the milk may be conſidered as the moſt probable cauſe of it.

In this caſe, if the pulſe is pretty full, and not extremely quick, nor the patient very faint, the evacuation commonly proves rather ſalutary than otherwiſe; ſo that but ſeldom any remedy is required beſides vegetable diet, or broth prepared in the following manner:

Boil

Boil a chicken, the ſkin and fat being carefully taken off, about forty minutes in a gallon of water, ſeaſoned agreeably with ſalt and mace. During boiling, the ſcum muſt be taken off as it riſes.

Of this broth, commonly called chicken water, the patient may drink very copiouſly, eſpecially if the dejections be very frequent.

Mr. Burnet, in Groſvenor-Street, (an experienced ſurgeon and man-midwife, to whom I was firſt obliged for this hint) informs me, that he has cured ſeveral patients by this means only, without having recourſe to medicines. I have ſeen its ſalutary effects alſo, and therefore can recommend it from my own experience.

But if, notwithſtanding the uſe of theſe aliments, the diarrhœa ſhould continue with violence, a doſe of the mixtura oleoſa cum gummi may be given every three or four hours, the tinctura thebaica being added or not as the caſe requires. Or ſhould there be much reaſon to believe that the bowels are greatly vellicated or oppreſſed with morbid humours, a gentle aperient, like the one above directed, may be given previous to the uſe of the mixture.

From obſtructed perſpiration.

§. IV. When it appears, upon a ſtrict enquiry, that the dejections are neither in conſequence of a former illneſs, nor of any error committed in regard to diet; there being alſo no ſudden receſſion of the milk from the breaſts, nor ſigns of an obſtruction of the lochia: but ſome wet or damp linen having been uſed, or the patient having expoſed herſelf imprudently to the cold air, &c. ſoon after which a diarrhœa enſued; it then, I think, is evident that the grievance ariſes from obſtructed perſpiration. This being known, the patient muſt be kept a little warmer than uſual, whilſt the following draught or a ſimilar one is taken, in order to bring on a diaphoreſis as ſoon as poſſible.

IV ℞ Pulveris bezoardici ſcrupulum unum,
Radicis contrayervæ ſemi-ſcrupulum,
Tincturæ thebaicæ guttas ſedecim,
Aquæ fæniculi ſeſcunciam,
—— cinnamomi ſpirituoſæ,
Syrupi ſimplicis, ſingulorum drachmas duas;
Miſceantur, et fiat hauſtus ſtatim ſumendus, et quarta quaque hora repetendus, tinctura thebaica omiſſa.

Leſt * any offenſive matter ſhould be accumulated in the inteſtines, it may be neceſſary to add fifteen or twenty grains of rhubarb to the firſt draught.

Rice gruel or chicken water may be drank at firſt; and, as ſoon as the ſkin begins to grow moiſt, ſome white wine whey. But if the pores have been ſo greatly contracted as to render this attempt ineffectual, a fever commonly ſupervenes ſoon, and ſometimes an obſtruction of the lochia alſo; which happening, the reſt of the cure is to be conducted differently: for which reaſon, we ſhall refer the reader to Chap. VII.

From violent agitations of the mind.

§. V. When the diarrhœa is, in conſequence of a ſurprize, or of any violent commotion of the mind (knowable by ſuch circumſtances having preceded without any other evident cauſe concurring) the patient may be relieved by the uſe of draught ſecond, ſection ſecond; and then ſuch medicines as are ſoft and cephalic, as for example;

V ℞ Mixturæ oleoſæ cum gummi ſeſcunciam,
Tincturæ valerianæ ſimplicis drachmas duas;
Miſce, fiat hauſtus quarta quaque hora ſumendus.

* Fordyce's elements of the practice of phyſick, part 2, 2d edition, page 107.

But

But, as hath been ſaid before, it being hardly poſſible to lay down invariable rules for the cure of any one diſeaſe, we muſt obſerve in general, that, whatever cauſe it may be thought to proceed from, if the primæ viæ have been firſt cleanſed from the noxious humours, and notwithſtanding this, and the uſe of the other means above recommended, the dejections continue ſo violent as to threaten the patient with immediate deſtruction, a reſpite muſt be obtained as ſoon as poſſible, and for this purpoſe the following mixture may be given.

VI. ℞ Cretæ præparatæ drachmas duas,
Pulveris amyli unciam dimidiam,
Aquæ cinnamomi tenuis uncias ſex,
——————— ſpirituoſæ,
Syrupi ſimplicis, ſingulorum unciam unam;
Miſceantur, et fiat mixtura cujus capiat cochlearia tria, vel quatuor poſt ſingulas ſedes liquidas.

An injection alſo, conſiſting of about a quart of rice gruel, may be thrown up, and repeated once or twice if needful, in order to cleanſe the rectum and lower part of the colon. This being done, the following enema may be uſed:

VII ℞ Amyli drachmas duas,
Solve coquendo in aquæ puræ unciis ſex,
deinde adde
Tincturæ thebaicæ guttas
Viginti et quinque;
Miſce, fiat enema ſtatim injiciendum, et pro re nata repetendum.

It muſt be obſerved alſo, that during the courſe of this diſorder, if the ſtomach is affected with a regurgitation of bile, or with an accumulation of any other kind of morbid humour, ſo much as to cauſe retchings and vomitings, a gentle puke, conſiſting of two or three pints of camomile tea, or of warm water alone may be given, even ſo early as the third or fourth day after delivery; and, ſhould theſe not operate ſo well as to relieve the ſtomach, the diarrhœa ſtill continuing, then the pulvis radicis ipecacoanhæ may be given, ad grana tria vel quatuor; by which means, the patient will commonly find relief.

And finally, ſhould there be much diſtention and pain in the bowels by reſtraining the ſtools, the head hurried, or the fever increaſed, the alvine tube muſt then be unloaded occaſionally with a gentle aperient, as a drachm or two of the ſalt recommended, or ten or twelve grains of rhubarb; after which, the liberal uſe of the chicken water and oily mixture may be continued ſo long as there is occaſion.

We may obſerve here, that purgings in child-bed that have continued long, eſpecially if attended with much fever, prove too often fatal.

CHAP.

## CHAP V.

## OF THE MILK FEVER.

THE fever here meant, is that which happens when the milk has been generated ſo very copiouſly as to cauſe the breaſts to ſwell much, and become extremely painful, occaſioning a quick and ſometimes very full pulſe; attended with anxiety, great pain in the head, ſometimes wanderings, cold rigors, and great thirſt.

Or when the natural progreſs of the milk (deſcribed in Part III. Chap. II. §. V.) has been greatly diſturbed by miſconduct; as for inſtance, when the patient has ate too plentifully, uſed liquids, or medicines which have been too heating, imprudently expoſed her arms and breaſts, &c. to the cold air, ſo as to obſtruct perſpiration; ſuffered herſelf to be long coſtive, or to be kept too warm either by many coverings, or by too hot a room, &c. whereby the briſk circulation, which at this time is natural, and therefore neceſſary, becomes perhaps increaſed ſo much as to change the circulating fluids into a very fizy ſtate, bringing on danger of ſuppurations in the breaſts, an obſtruction of the lochia, miliary eruptions or worſe conſequences.

§. II. Now to guard againſt theſe evils, the patient ſhould be kept extremely quiet, and properly warm, that a moderate degree of moiſture may always be maintained upon the ſurface of the whole body. Barley water, or any other ſoft liquid, which is not too heating, may be drank freely: panadas, &c. may be uſed. But all kinds of animal food ought to be avoided as much as poſſible, till the fever abates

Cure.

abates, and the appetite begins to recover; at which time, ſuch as are of eaſy digeſtion may be allowed, though ſparingly at firſt.

§. III. As to externals, none ſhould be uſed with a view to repel the milk; for if they take ſuch effect as to drive it ſuddenly back into the blood, the vaſcular ſyſtem will be over-charged, upon which a train of evils may probably enſue. Or ſhould they not have this effect (as often is the caſe) they, notwithſtanding, ſerve only to irritate, and confirm the obſtructions within the breaſts.

Such, as are emollient and moderately warm, give moſt relief, and therefore are eligible, as for example:

℞ Olei amygdalarum dulcium,
Aquæ lavendulæ,
Singulorum ſeſqui-unciam;
Miſce, fiat embrocatio, qua illine mammas calidè bis terve in die.

The emplaſtrum commune ſpread upon leather is very commonly uſed, and is probably ſerviceable, by keeping the ſkin warm, and helping, in ſome degree, to prevent its being too much diſtended. Notwithſtanding theſe applications, it is ſometimes neceſſary to have the breaſts drawn now and then, either by a child, an adult, or by glaſſes (as obſerved Part III. Chap. III. §. III.) until the influx of the milk abates.

§. IV. With reſpect to internals, ſoft and ſudorific medicines are proper; as for example, ſpermaceti, mixtura oleoſa cum gummi, pulvis contrayervæ compoſitus, ſpiritus mindereri, &c. Care muſt always

ways be taken to keep the alvine tube free and eaſy; firſt by glyſters, and then by gentle purgatives, as thoſe recommended in Part II. Chap. IV. §. IV. and in Part III. Chap. III. §. III.

By theſe means, the breaſts uſually aſſwage in a few days, the fever ſubſides, the patient grows eaſy, and gradually recovers health.

But if the caſe has been neglected, or ill-treated at the beginning, or if, notwithſtanding all ſuitable means have been uſed, the diſorder ſtill gains ground, as ſometimes happens, and there is an appearance of an abſceſs, the cure then may be conducted in ſuch a manner as ſhall be directed in the following chapter.

CHAP.

## CHAP. VI.

## OF ABSCESSES IN THE BREASTS.

WHEN, by reaſon of the milk, the breaſts grow extremely painful, ſwelled and hard, either wholly or in part, circumſcribed tumors or lumps having formed, with the ſkin upon them appearing of an inflamed red colour, an abſceſs is portended.

§. II. In this caſe, I have never been able to prevent a ſuppuration, and therefore am of opinion, that it will generally prove beſt not to counter-act it. Accordingly, the natural excretions are not to be increaſed; the quieter the patient is kept the better, and the diet which is uſed ſhould be of the nutritive kind.

A bread and milk poultice, ſome white lily roots being bruiſed and well mixed with it, and a little olive oil ſpread over that ſide which is to come next the ſkin, may be applied moderately warm to the part affected, and renewed twice or thrice a day. If, by this means, the maturation does not come forward ſo ſoon as might be expected, then the indurated part muſt be covered with the following plaiſter.

℞ Emplaſtri communi, cum gummi quantum
ſufficit, ſuper alutam extenſum.

When the pain is ſo extremely violent as to fatigue the patient and to prevent her ſleep, an anodyne ſhould be given at bed-time, and repeated every night until the tumor is ripe, provided it neither diſagrees with her, nor interferes with the time of the lochial diſcharges; the latter however will but ſeldom occur.

The maturation of theſe impoſthumations is ſometimes ſo very ſlow, that a practitioner of good experience may find it difficult (at leaſt for a time) to know with any certainty whether it will be effected or not.

But, whilſt the caſe continues doubtful, there cannot be an error, I preſume, in proceeding as above directed. If the tumour diſperſes, it will be neceſſary to purge, as often as the patient's ſtrength, and other circumſtances will admit.

If it be likely to grow ſchirrous, not only purging, but bleeding alſo is neceſſary. But if maturation takes place, the fever and pain abate, the urine depoſites a copious ſediment, the red colour of the ſkin diſappears, the hardneſs goes partly away, the fluctuation is to be felt, and a portion of the integuments points or uſually protrudes from the depending part of the tumour; hence, if the patient's ſtrength is but tolerably good, this part ſoon burſts; and ſometimes ſloughs, or caſts off to about the breadth of a ſix-pence. The pus conſequently iſſues forth, and may be duly diſcharged afterwards by ſtroking the ſkin gently all round, from the baſis of the tumour towards the aperture, before the application of each poultice.

In a few days, the inner ſloughs, or diſeaſed glands, &c. ſeparate from the ſound parts encompaſſing the cavity; and granulations, of what may be called new fleſh, begin to riſe. Theſe granulations being touched once or twice a day with any of the fluid terebinthinate balſams moderately warmed, and the above cataplaſm, or any other emollient one, applied immediately to the part affected, without lint or any thing elſe intervening (unleſs the cavity be very deep; if ſo, a little lint being dipped in the balſam, and applied looſely within the wound, is ſometimes neceſſary as well as the poultice) the cure is uſually performed in a ſhort time.

But when the patient is very weak, or has an ill habit of body, and the impoſthumation does not break of itſelf ſo readily as could be wiſhed, then to guard againſt ſuch an abſorption of the pus as might enſue,

enſue, and contaminate the circulating fluids, an opening muſt be made by the lancet in the part which points, ſufficiently large for giving a free diſcharge to the whole contents of the abſceſs; this being done, the cure may be conducted as above directed.

§. III. Before I finiſh this chapter, I muſt beg leave to obſerve, that no tents, or any of the eſcharotick medicines ſhould ever be uſed in the cure of theſe impoſthumations. For experience teaches, that ſoft and eaſy applications have always the beſt effects. Therefore, when the abſceſs is opened, whether by nature or by art, the cure may be effected as above directed.

By this method, the ſloughs, or diſeaſed glands caſt off, the diſcharge vents freely; and being directly abſorbed by the poultice, the edges of the aperture, and the ſurrounding ſkin, are not in the leaſt irritated by its acrimony; the new granulations are cheriſhed, the limits of the cavity leſſen, and the indurated glands, about the baſis of the tumour, become gradually relieved, by the aſſiſtance of this emollient fotus.

When the abſceſs is incarned, or ſo well contracted as to require only cicatrization, the poultice and digeſtive are then to be laid aſide, and the cure to be effected by the application of pledgets covered with ceratum epuloticum, or unguentum tripharmacum, &c. a gentle purge or two being given as the caſe requires.

If pimples come out upon the ſkin (as commonly happens by the application of the poultice) they, being dreſſed by either of the above cerates ſpread upon lint, commonly dry, and then ſcale off in a few days.

§. IV. I muſt farther obſerve, that the uſe of poultices, and liquid vulnerary balſams, is equally as effectual in the cure of abſceſſes, which form in any other part of the body; nay, even in that of the moſt

moſt ſtubborn ulcers on the legs. This I can aver from much experience: and as I am convinced of its being preferable to the common method of dreſſing with pledgets, I cannot but confeſs how much I was pleaſed (in 1764) when Mr. Hunter told me his method of treating green wounds.

It was this, that whilſt he attended the army in Portugal, he had uſed emollient cataplaſms alone, not only in the cure of ſimple recent wounds, but in that of amputations alſo; and had found the effects to be always as follows, viz. there was leſs uneaſineſs to the patient than by the common method, the digeſtion came ſooner on, the inflammation went ſooner off, the granulations roſe kindly, the edges cicatrized; and in ſhort each cure was, by this application alone, performed always ſooner than thoſe were which had been treated in the common way.

This was the firſt hint I ever had of treating green wounds in this manner. I have ſeen its effects ſince, not only in ſimple and contuſed wounds, but in amputations alſo, by which I am now convinced of its ſuperior advantages; eſpecially if the ſurface of the wound be well covered with ſome liquid vulnerary balſam before the application of each cataplaſm.

I ſhould have obſerved before, that a fotus prepared with the emollient and diſcutient herbs, applied to the affected breaſt twice or thrice a day, is often found efficacious in removing the inflammation, diſperſing the tumour, and conſequently preventing ſuppuration, if timely uſed at the beginning of the diſorder.

## CHAP. VII.

## OF THE SUPPRESSION OF THE LOCHIA.

WHAT falls under our preſent conſideration, is not only a ſuppreſſion of the lochia, but what is called in the (northern parts of this Iſland) the weed; and in the ſouthern parts, by ſome the lochial, and by others the puerperal fever. Not to take up the reader's time with a nice diſquiſition to aſcertain which of theſe appellations can convey the beſt idea; I ſhall only remind him, that a fever, without a ſuppreſſion, is not uncommon in the month of childbed; but a ſuppreſſion, as far as I can diſcover, is never to be found without a fever: yet, (if diſtinct) which is prior? or whether the ſuppreſſion is not, in ſome caſes, the primordial, and in others, the conſequent, it is not eaſy to determine*. However, leaving the deciſion of theſe points to future diſcovery, I ſhall, in order to inform the ſtudent as well as I can, take notice firſt of the moſt probable cauſes; ſecondly, of the diagnoſtics; thirdly, of the prognoſtics; and forthly, of the method of cure, giving ſome hiſtories afterwards by way of elucidation.

§. I. Firſt then, the cauſes, which may be aſſigned, are very different, to wit, a peculiar miaſm in the atmoſphere; an admiſſion of cold air, ſo freely to the ſurface of the body, as to excite rigors, &c. an ingreſs of ſuch air into the cavity of the uterus, whereby the blood may be ſuddenly thickened or congealed, &c. an over-heated or hurried circulation, by which the uterine veſſels may be over-charged or ſuffocated; every thing capable of bringing on an inflammation in the ſubſtance of the uterus, or in any part ſo connected with it, as to affect

* Thoſe ſentiments ſtand as I firſt wrote. Since that time, the world is much obliged to Mr. Charles White, F.R.S. and Surgeon, at Manchester, for an excellent work publiſhed by him, in 1773; wherein he has treated of this fever much more fully than I durſt venture to do, from my own experience at that time. In page 134, ſpeaking of an obſtruction of the Lochia, he ſays; "it is not a primary diſeaſe, the effect is miſtaken for the cauſe."

affect it; any violent or inſtantaneous agitation of mind; or whatever is capable of exciting irritation. A ſuppreſſion of the lacteal ſecretion, as alſo a diarrhœa may contribute to it.

§. II. Every phyſician ſhould previouſly know, and keep in mind the ſeveral circumſtances peculiar to women in childbed; more eſpecially ſuch as occur in the firſt week, that he may be able to diſtinguiſh rightly natural ſymptoms from thoſe which are morbid. Although a curſory view of theſe circumſtances hath been given in Part III. Chap. II. §. V. yet I preſume an exact detail of them here, as appeared to me in a late caſe, will not be deemed improper. Diagnoſtics.

The woman was of a large ſize, inclining to be corpulent, and aged 34. Her catamenia uſed to return every 24th or 25th day, continue copious two days, the third grow leſs, and by the fourth be entirely off. She had born ſeven children. When ſhe ſuckled, the menſtrua appeared alſo as above deſcribed.

On the 11th of October 1768, ſhe was delivered, at ten in the morning, of the eighth child, which was ſmall, but lively, and proved healthy. The placenta was of a proportionate ſmallneſs, and came away very naturally in about fifteen minutes after the child, during which time, by the appearance of the linen, about four ounces of blood were diſcharged.

Immediately upon the expulſion of the ſecundines, a cloth weighing of troy, ℥iii. ʒvi. was properly applied;—in fifteen minutes, the patient's apparel and bed being put to rights, it was taken away and weighed ℥iii. ʒvii. gr. xx.

The ſecond of the ſame weight being applied directly, viz. at fifteen minutes after ten, weighed at eleven ℥iv. ʒivſs.

Third of the ſame weight, applied on the removal of the ſecond, weighed at twelve, ℥iv. ʒv. gr. lv. The after pains had been frequent and pretty forcing all this time.

Fourth, of ℥iii. ʒv. applied at twelve, weighed at two in the afternoon, ℥iv. ʒiii. gr. xx;—one clot weighing ℥iſs. now diſcharged;—pains not quite ſo urgent;—lochia all this time of a florid red colour.

Fifth, of ℥iſs. gr. lix. applied at two, weighed at four ℥ii. gr. xv;—pains leſs frequent;—lochia ſtill very red;—about one third part of the three firſt cloths wetted, and about one half of the two laſt.

Sixth, of ℥i. ʒv. gr. ix. applied at four, weighd at ſix ℥ii. gr. xxx.

Seventh, of ℥i. ʒv. gr. ix. applied at ſix, weighed at eight ℥ii. ʒi. gr. xx.

Eighth, of ℥ii. ʒii. gr. v. applied at eight, weighed at ten ℥ii. ʒv. gr. lvi;—cloths half wetted;—colour beginning to change pale. Since delivery the patient had diſcharged urine four times, reddened by mixing with the lochia as it came away;—ſhe had ſome ſleep;—the ſkin was moiſt;—the after-pains neither ſo frequent, nor ſo forcing;—the pulſe rather fuller than it had been all day, and ſome what quicker than the natural ſtandard.

Ninth, applied at ten, removed at four in the morning of the ſecond day, was not weighed, but, judging from its appearance, together with that of the apparel and bed linen, about ℥i. ʒii. of lochia were looked upon as diſcharged;—colour rather paler.

Tenth, of ℥ii. ʒvii. gr. x. applied at four, weighed at ſeven ℥iii. ʒiv. gr. xxiv;—a clot weighing ʒii. diſcharged;—the patient had ſlept in the night, and perſpired kindly; no thirſt;—pulſe full, not quick.

Eleventh, applied at ſeven, removed at ten, was not weighed; but the lochia contained computed at ʒiv;—colour a very pale red;—a little pricking in the breaſts, as if the milk was beginning to generate.

Twelfth, of ℥iii. ʒvi. applied at ten, weighed at one in the afternoon ℥iv. ʒi. gr. x;—about one third wet;—colour nearly as the laſt.

Thirteenth,

Thirteenth, applied at one, removed at four, was not weighed, but the quantity of lochia it contained eſtimated at ʒiii;—the uterine efflux began now to ſmell ſomewat like the lymphatic diſcharge iſſuing from inciſed wounds before they digeſt;—colour more pale;—pulſe at ſeventy;—ſome milk in the breaſts;—the child allowed to ſuck;—the patient's appetite good;—in every reſpect eaſy;—one ſtool.

Fourteenth, of ℥iii. ʒiii. gr. lv. applied at four, weighed at ſeven ℥iii. ʒvi. gr. xix;—about a tenth part wet;—of a very pale reddiſh colour?—ſmell as before, but rather more fœtid;—The pulſe at ſeventy-five;—no thirſt;—the breaſts pretty well filled with milk;—a conſiderable quantity of urine diſcharged, not tinged with the lochia;—ſkin ſtill moiſt.

Fifteenth, applied at ſeven, removed at ten, was not weighed, but calculated to have contained of lochia ʒii;—was a little ſtained with a reddiſh caſt;—fœtid as the laſt.

Sixteenth, of ℥iii. ʒiv. gr. viii. applied at ten, weighed at two in the morning of the third day ℥iii. ʒvi. gr. xxx;—nearly half wet with lymph only, there being ſcarce any reddiſh caſt;—more fœtid.

Seventeenth, of ℥iii. ʒi. gr. iv. applied at two, weighed at ten ℥iii. ʒv;—about half wet;—no red colour;—ſmell offenſive, even at a yard and half diſtance;—the patient had ſlept well the night before;—a diaphoreſis over all the body;—pulſe at eighty;—breaſts pretty full, though often drawn by the child;—a little pain in the head;—thirſty;—eaſy at ſtomach.

Eighteenth, of ℥ii. ʒv. gr. xxx. applied at ten, weighed at four in the afternoon ℥iii. ʒi;—as fœtid as the laſt;—head-ach moderate;—breaſts very full of milk;—pulſe at eighty-eight;—more thirſty;—a moiſture over the whole body;—urine as before;—one ſtool.—Yeſterday and to-day, without my knowledge, the patient had eat for dinner pickled pork, and drank beer.

Nineteenth,

Ninteenth, of ℥iii. ʒiv. gr. xxxv. applied at four, weighed at ten ℥iv. ʒii. gr. xi;—about one third wet;—ſcarce ſo fœtid;—colour the ſame;—pulſe at ſeventy-ſix;—not ſo thirſty;—tongue clean and moiſt;—head eaſy;—breaſts as before;—ſkin agreeably moiſt;—urine turbid, of a whitiſh branny colour.

Twentieth, of ℥iii. ʒi. gr. lvi. applied at ten, weighed at five in the morning of the fourth day ℥iii. ʒv. gr. xv;—about a third part wet;—no red colour;—not more fœtid.

Twenty-firſt, of ℥iii. gr. xxxiv. applied at five, weighed at ten ℥iii. ʒiii. gr. xxx;—more than one third wet;—colour and fœtor as before;—ſlept well laſt night, notwithſtanding the head had ached, and the breaſts had been very full and uneaſy;—perſpiration the ſame;—pulſe at ſixty-five —no thirſt;—urine of a whey colour, depoſiting a copious branny ſediment.

Twenty-ſecond, of ℥iii. ʒiv. applied at ten, weighed at four in the afternoon ℥iii. ʒv. gr. xxv;—about a quarter wet;—colour the ſame;—not ſo fœtid;—head and breaſts eaſier;—appetite good;—chicken eat for dinner,—pulſe at eighty;—not ſo thirſty as yeſterday;—one ſtool.

Twenty-third, of ℥iii. ʒiv. gr. v. applied at four, weighed at ten ℥iv. gr. xxx;—colour and fœtor as before;—pulſe ſmall and ſo quick as to beat one hundred in a minute;—ſome ale had been drank without my knowledge;—a little pain in the head;—ſkin rather dry;—other ſymptoms much the ſame as before.

Twenty-fourth, of ℥iii. gr. xv. applied at ten, weighed at five in the morning of the fifth day ℥iii. ʒiv, gr. x.—about a fourth part wet;—of a reddiſh caſt;—the beginning of laſt night reſtleſs;—grew eaſy about twelve upon a ſweat breaking out;—ſome head-ach;—breaſts full and very uneaſy;—chilly for about a minute;—ſlept this morning.

Twenty-fifth, of ℥iii. ʒii. gr. ix. applied at five, weighed at ten ℥iii. ʒiii. gr. l;—about a ſixth part wet;—ſtill fœtid;—colour

the

the ſame;—a little pain in the head;—breaſts eaſier;—pulſe at ſeventy-five;—a gentle moiſture on the ſkin;—tongue clean and moiſt;—no thirſt, but the appetite not ſo keen;—urine whey coloured, turbid, and with leſs ſediment.

Twenty-ſixth, of ℥ii. ʒv. gr. lv, applied at ten, weighed at four in the afternoon ℥iii. ʒi. gr. ix;—near half wet;—colour and fœtor as before;—head and breaſts more eaſy;—pulſe at ninety;—very little thirſt;—ſome chicken eat for dinner;—no ſtrong liquor drank; but I had reaſon to think the caudle uſed was too ſtrong, and high ſeaſoned. Beſides ſhe yeſterday ſat up till her bed was made, for the firſt time ſince delivery, after which her ſkin was not ſo moiſt as before. This, together with the errors in diet above-mentioned, are the only reaſons I can give for the late variations of the pulſe.

Twenty-ſeventh, of ℥ii. ʒvii. gr. ix. applied at four, weighed at ten ℥iii. ʒiii. gr. li;—colour and fœtor the ſame;—pulſe ſtill at ninety;—ſkin a little moiſt;—urine made at ſeven, inclined to a dark citron colour, depoſiting ſome ſediment;—again at nine, colour the ſame, but no ſediment.

Twenty-eighth, of ℥iii. ʒiv. gr. xxx. applied at ten, weighed at ſeven in the morning of the ſixth day ℥iv. ʒii. gr. xv;—half wet;—colour and fœtor as before;—ſlept better laſt night than ſince delivery;—ſkin agreeably moiſt;—head and breaſts very eaſy;—no thirſt;—appetite better;—pulſe at ſixty-three;—one ſtool.

Twenty-ninth, of ℥iii. ʒv. applied at ſeven, weighed at ten ℥iii. ʒvi;—ſymptoms as before.

Thirtieth, of ℥iii. ʒi. applied at ten, weighed at ſeven in the evening ℥iii. ʒiv. gr. l;—eat mutton for dinner and drank ſmall beer;—ſat up an hour;—pulſe at ſeventy-ſix;—a little thirſty;—ſkin moderately moiſt;—urine high coloured, depoſiting ſome ſediment.

Thirty-firſt, of ℥iii. ʒi. applied at ſeven, weighed at three in the morning of the ſeventh day ℥iii. ʒvii. gr. xxv:—colour ſomewhat red.

Thirty-

Thirty-ſecond, of ℥i. ʒvii. gr. x. applied at three, weighed at ten ℥ii. ʒiii;—not ſo red;—ſlept well moſt of the laſt night;—pulſe at ſixty;—urine of a good citron colour;—head and breaſts eaſy;—appetite good;—diaphoreſis leſs.

Thirty-third, of ℥ii. ʒiii. applied at ten, weighed at two in the afternoon ℥ii. ʒvi. gr. lvi;—colour the ſame;—leſs fœtid.

Thirty-fourth, of ℥i. ʒv. gr. xxxv. applied at two, weighed at eight ℥i. ʒvii. gr. x;—in every other reſpect as before.

Thirty-fifth, of ℥iii. gr. ix. applied at eight, weighed at five in the morning of the eighth day ℥iii. ʒvi. gr. xvi;—half wet;—high coloured, but not red

Thirty-ſixth, of ℥ii. ʒii. applied at five, weighed at ten. ℥ii. ʒii. gr. xl;—diſcharge ſtill of a darkiſh colour, and more thick in conſiſtence.

Thirty-ſeventh, of ℥iii ʒiv. gr. xl. applied at ten, weighed at four in the afternoon ℥iii. ʒv. gr. x.

Thirty-eighth, of ℥ii. ʒvi. gr. xxxiv. applied at four, weighed at nine ℥ii. ʒvii gr. xxiv.

Thirty-ninth, of ℥iii. ʒiv. gr. ix. applied at nine, weighed at ten in the morning of the ninth day ℥iv. ʒii. gr. i;—about half wet;—colour reddiſh;—ſmell leſs fœtid.

Forty,—Forty-firſt, applied between this time and eight in the evening, not weighed, but, by appearance, the lochia contained were proportionable to the laſt, viz. ℥iv. gr. xxx.

Forty-ſecond, of ℥iii. gr. x. applied at eight, weighed at ten in the morning of the tenth day ℥iii. ʒiv. gr. v;—half wet;—colour as before.

Forty-third, of ℥i. ʒv. gr. xxx. applied at ten, weighed at ſix in the evening ℥i. ʒvi. gr. x;—colour more pale;—not ſo fœtid.

Forty-fourth, of ℥i. ʒv. applied at ſix, weighed at two in the morning of the eleventh day ℥i. ʒv. gr. xxxi.

Forty-

Forty-fifth, of ʒii. ʒi. applied at two, weighed at ten ʒii. ʒi. gr. xxx.

Forty-ſixth, of ʒiii. ʒi. applied at ten, weighed at four in the afternoon ʒiii. ʒi. gr. xxii.

Forty-ſeventh, of ʒiii. ʒii. applied at four, weighed at ten in the morning of the twelfth day ʒiii. ʒiv;—colour pale;—now not fœtid.

Forty-eighth, of ʒiii. ʒv. applied at ten, weighed at four in the afternoon ʒiii. ʒiv. gr. lvi. This cloth ſtained in one place only, about the breadth of half a crown. The loſs of gr. iv. of its weight, I apprehend, was owing to its becoming drier by the heat of the patient, than when it was applied; eſpecially as at this time ſhe had no diaphoreſis.

Forty-ninth, of ʒii. ʒvi. gr. xxv. applied at four, weighed at ten in the forenoon of the thirteenth day ʒii. ʒvii. gr. xxi.

On the 14th day no lochial appearance;—the patient in every reſpect well;—the child had ſucked during all this time.

There was no more diſcharge from the uterus till the beginning of the fourth week, when an efflux came on, of a good red colour, and ſo copious as to wet two clothes in twenty-four hours, each a little more than half wet; on the ſecond day, one about half wet, and not quite ſo red; on the third another, neither ſo wet nor red; and on the fourth it was intirely off.

This diſcharge, in its appearance and time of continuance reſembled exactly her ordinary menſtrua. Such a flux about the end of the third or beginning of the fourth week, is not uncommon, eſpecially in women who do not ſuckle, or whoſe lochia are but ſcanty at firſt.

## A TABLE EXHIBITING THE QUANTITY OF THE LOCHIA FROM THE ABOVE CASE.

| Clothes. | Time applied. | Day of lying-in | Ounces. | Drachms. | Grains. |
|---|---|---|---|---|---|
| | Between the birth of the child, & that of the secundines. Hours Min. | First Day. | 4 | | |
| N° 1 | - - - - 15 | - - - - - | - - - - | 1 | 20 |
| 2 | - - - - 45 | - - - - - | - - - - - | 6 | 30 |
| 3 | 1 | - - - - - | - - - - - | 7 | 55 |
| 4 a clot included | 2 | - - - - - | 2 | 2 | 20 |
| 5 | 2 | - - - - - | - - - - - | 3 | 16 |
| 6 | 2 | - - - - - | - - - - - | 3 | 21 |
| 7 | 2 | - - - - - | - - - - - | 4 | 11 |
| 8 | 2 | - - - - - | - - - - - | 3 | 51 |
| 9 | 6 | - - - - - | 1 | 2 | |
| 10 a clot included | 3 | - - - - - | - - - - - | 7 | 14 |
| 11 | 3 | - - - - - | - - - - - | 4 | |
| | 24 | Total of the First Day. | 12 | 5 | 58 |
| | | Second Day. | | | |
| 12 | 3 | - - - - - | - - - - - | 3 | 10 |
| 13 | 3 | - - - - - | - - - - - | 3 | |
| 14 | 3 | - - - - - | - - - - - | 2 | 24 |
| 15 | 3 | - - - - - | - - - - - | 2 | |
| 16 | 4 | - - - - - | - - - - - | 2 | 22 |
| 17 | 8 | - - - - - | - - - - - | 3 | 56 |
| | 24 | Total of the second Day. | 2 | | 52 |

| Clothes. | Time applied. | Day of lying-in. | Ounces. | Drachms. | Grains. |
|---|---|---|---|---|---|
| | Hours. | Third Day. | | | |
| N° 18 | 6 | - - -- - - | - - - - - | 3 | 30 |
| 19 | 6 | - - -- - - | - - - - - | 5 | 36 |
| 20 | 7 | - - -- - - | - - - - - | 3 | 19 |
| 21 | 5 | - - -- - - | - - - - - | 2 | 56 |
| | 24 | Total of the third Day. | 1 | 7 | 21 |
| | | Fourth Day. | | | |
| 23 | 6 | - - -- - - | - - - - - | 1 | 25 |
| 22 | 6 | - - -- - - | - - - - - | 4 | 25 |
| 24 | 7 | - - -- - - | - - - - - | 3 | 55 |
| 25 | 5 | - - -- - - | - - - - - | 1 | 41 |
| | 24 | Total of the Fourth Day. | 1 | 3 | 26 |
| | | Fifth Day. | | | |
| 26 | 6 | - - -- - - | - - - - - | 3 | 14 |
| 27 | 6 | - - -- - - | - - - - - | 4 | 42 |
| 28 | 9 | - - -- - - | - - - - - | 5 | 45 |
| 29 | 3 | - - -- - - | - - - - - | 1 | |
| | 24 | Total of the fifth Day. | 1 | 6 | 41 |
| | | Sixth Day. | | | |
| 30 | 9 | - - -- - - | - - - - - | 3 | 50 |
| 31 | 8 | - - -- - - | - - - - - | 6 | 25 |
| 32 | 7 | - - -- - - | - - - - - | 3 | 50 |
| | 24 | Total of the fixth Day. | 1 | 6 | 5 |
| | | Seventh Day. | | | |
| 33 | 4 | - - -- - - | - - - - - | 3 | 56 |
| 34 | 6 | - - -- - - | - - - - - | 1 | 35 |
| 35 | 9 | - - -- - - | - - - - - | 6 | 7 |
| 36 | 5 | - - -- - - | - - - - - | | 40 |
| | 24 | Total of the seventh Day. | 1 | 2 | 18 |

| Clothes. | Time applied. | Day of lying-in. | Ounces. | Drachms. | Grains. |
|---|---|---|---|---|---|
| | Hours. | Eighth Day. | | | |
| N° 37 | 6 | - - - - - - | - - - - - | - - - - - | 30 |
| 38 | 5 | - - - - - - | - - - - - | - - - - - | 50 |
| 39 | 13 | - - - - - - | - - - - - | 5 | 52 |
| | 24 | Total of the Eighth Day. | | 7 | 12 |
| | | Ninth Day. | | | |
| 40 } | 10 | - - - - - - | - - - - - | 4 | 30 |
| 41 } | | | | | |
| 42 | 14 | - - - - - - | - - - - - | 3 | 55 |
| | 24 | Total of the ninth Day. | | 8 | 25 |
| | | Tenth Day. | | | |
| 43 | 8 | - - - - - - | - - - - - | - - - - - | 40 |
| 44 | 8 | - - - - - - | - - - - - | - - - - - | 31 |
| 45 | 8 | - - - - - - | - - - - - | - - - - - | 30 |
| | 24 | Total of the tenth Day. | | 1 | 41 |
| | | Eleventh Day. | | | |
| 46 | 6 | - - - - - - | - - - - - | - - - - - | 22 |
| 47 | 18 | - - - - - - | - - - - - | 2 | |
| | 24 | Total of the eleventh Day. | | 2 | 22 |
| | | Twelfth Day. | | | |
| 48 | 6 | - - - - - - | - - - - - | - - - - - | |
| 49 | 18 | - - - - - - | - - - - - | - - - - - | 56 |
| | 24 | Total of the twelfth Day. | | | 56 |
| | | Thirteenth Day. | | | |
| 50 | 24 | - - - - - - | - - - - - | | |
| | | Total of the thirteenth and Part of the fourteenth Day. | | | |

Notwithſtanding the above calculation, it is not unuſual for very plethoric women, who have large children with placentæ in proportion, to diſcharge about ten or twelve ounces of blood between the birth of the child and that of the ſecundines, even if the time exceed not twenty or thirty minutes; nay, ſome loſe near a pound: but, in both caſes, the decreaſe, though gradual, is ſo very quick, that at the end of twelve hours, the quantity of lochia diſcharged is nearly the ſame as in the above table, viz. about ℥iv in two hours.

It is alſo obſervable, that moſt women, the child and placenta being of the ordinary ſize, have about ℥viii at the time of birth, the flux leſſening as above ſtated.

On the other hand, in caſes where the child has been dead in the womb any conſiderable time, as two or more days before delivery, it has ſeemed to me, that the quantity of the lochia has been leſs than that in the above table, and of a paler colour even at the beginning. Sometimes there has been ſcarce any redneſs at all, and yet the patient has recovered in the uſual time without any fever which could be attributed to a ſuppreſſion.

Signs of a ſuppreſſion.

Now in caſe of a ſuppreſſion, the lochia change very ſuddenly from their natural redneſs, appearing in ſome inſtances of a blackiſh or diſagreeable duſky colour, and in others pale and frothy. Their quantity alſo is ſo ſuddenly diminiſhed, that in a very few hours there is not a ſtain to be ſeen on the linen. The patient is ſeized about the ſame time with a cold ſhivering, commonly ſucceeded by a high fever; the pulſe at firſt is quick, and for the moſt part very full; ſoon afterwards, in caſe there be no conſiderable return of the lochia, it uſually becomes ſmaller, and then ſo extremely hurried, as to beat above an hundred and twenty times in a minute. In ſome caſes, the rigor is immediately followed by a very profuſe ſweat. In others, eſpecially ſuch as end badly, there is but a partial diaphoreſis, the ſkin being very hot, and, at moſt times, the greateſt part of it very dry; the face is

ſome-

ſometimes fluſhed; there is commonly a wildneſs in the countenance, and the head ſeems hurried; the patient ſometimes ſighs and appears dejected; there is an oppreſſion about the epigaſtric region; the reſpiration is quick, and in ſome caſes difficult; the tongue is uſually dry, I ſay uſually, for in ſome caſes, eſpecially ſuch as terminate favourably, it is moiſt, and covered with a browniſh fur; the patient is thirſty, ſometimes inſatiably ſo; the abdomen is ſwelled, commonly tenſe, and the hypogaſtric region very tender, eſpecially near the os pubis, where the uterus may often be felt a little hard and bulky; there is a weight and uneaſineſs about the region of the pelvis, ſometimes a pain towards one ilium; the breaſts are always flaccid; and for the moſt part there is a diarrhœa.

A late author * has mentioned a ſymptom, which I do not remember to have ſeen in this fever, viz. a vomiting of green and yellow bitter matter. The tenſion and tenderneſs of the abdomen have been laid down as pathognomonic ſymptoms of this diſeaſe. I muſt confeſs my doubts on this point; for I have met with them early in the month of childbed, the patient being feveriſh at the ſame time; and yet, as appeared to me, the complaints aroſe only from an accumulation of indigeſted aliments in the primæ viæ; ſince, by giving a purgative, which brought away a large quantity of very putrid fœces, they were entirely removed. Beſides they are to be found in a miliary fever, as wi l be ſhewn in the next chapter.

Now, as to the appearances of the body after death, I am well aſſured by ſeveral practitioners in London, that of patients, who were ſeized, on the ſecond or third day after delivery, with a high fever, and a ſuppreſſion of the lochia and milk alſo, ſome died in leſs than twenty hours after the attack; and others did not outlive forty, and though the progreſs of their illneſs was ſo very rapid, yet it was obſerved, on opening their bodies after death, that the abdominal viſcera were

* See Denman's eſſays.

found always inflamed, particularly the inteſtines, ſome parts of which adhered together, and likewiſe to that portion of the peritoneum, which lines the abdominal cavity; and though the uterus often appeared inflamed, like the reſt of the viſcera, yet in many it ſeemed to have ſuffered leaſt by this fever; and nothing was ſeen, giving the leaſt reaſon to believe, it had been hurt in parturition. In the abdominal cavities of ſome, there was found a conſiderable quantity of a bloody ſerous fluid; and in others, a whitiſh mucus, gluing them together, and often a fluid ſimilar to pus lying looſe in the abdomen.

§ III. In regard to the prognoſtics; when the lochia are not entirely ſtopped, there being at leaſt ſome lymph diſcharging; when the breaſts have been replete with milk, and not prematurely deſerted; when the diarrhæa is moderate; the pulſe full, regular, and not extremely hurried, that is to ſay, not above a hundred; ſome moiſture over all the body; the head not much hurried, nor any great oppreſſion about the præcordia; the event will probably be favourable. I

But, when they are ſuddenly ſuppreſſed, the red colour having totally diſappeared, and the lymphatic part now diſcharging ſeeming not adequate to the quantity which ſhould proceed from the uterus, in order to relieve its veſſels, and give it liberty to regain it's natural ſtate; when that which remains is extremely fœtid, or appears frothy; when the patient has no milk in the breaſts, but much oppreſſion about the epigaſtric region; a very quick or difficult reſpiration, frequent ſighings, toſſings about in the bed, a great fullneſs of the abdomen, with a ſenſibility of pain about the hypogaſtric region, eſpecially if, but gently touched; a hot dry ſkin, or but partial ſweats; cold rigors, and the pulſe very much hurried, even to an hundred and twenty or thirty, the event is doubtful, and greatly to be dreaded.

Nay,

Nay, indeed, ſhould all or moſt of theſe ſymptoms appear on the ſecond or third day (the ſooner the worſe) more eſpecially, if the tongue alſo becomes black and rough, the thirſt inſatiable, the urine either very pale, or appearing like foul cyder with filaments in it, the diarrhæa violent in ſpite of all remedies, and the patient very delirious, the caſe proves generally, if not always, mortal.

Cure. § IV. Though the cauſes of this diſeaſe are various (as enumerated in §. I.), yet, as ſeems to me, the curative indications are principally but three, viz. firſt, a timely diminution of the quantity of the blood, as the patient's ſtrength can bear, in order to eaſe the circulation; ſecondly, an uſe of ſuch other means as are moſt likely to take off irritation; and thirdly, a counteraction of the tendency, which this diſeaſe has to putrefaction, by proper antiſeptics.

Firſt, To leſſen the quantity of the blood, veneſection is the moſt eligible means, and I lay very great ſtreſs upon it, provided it be begun early, that is, ſoon after the attack, while the pulſe is full, or before the viſcera are much affected; for, if this opportunity be loſt, the inflammation increaſes faſt, the pulſe ſinks, becoming ſmall, quick, weak, and at laſt irregular; ſo that bleeding now would be very injudicious.

Suppoſing then the ſuppreſſion, and its concomitant the fever, to begin ſo early as the third day after delivery, the pulſe full, and the diarrhæa moderate; let blood be taken from a large orifice to eight ounces. I prefer the veins of the arms to thoſe of the feet, becauſe, in general, the blood may be taken from the former with more certainty, as well as facility.

Secondly, In regard to medicines, emmenagogues and ſtimulants have been long and very commonly uſed in the cure of this diſeaſe. I rather think they do harm than good. Nor can I ſay much in behalf of bliſters. I can with more confidence recommend emollients

and

and refrigerants, in the beginning of the cure; becauſe I have generally ſeen better effects from the uſe of them, than from that of any other claſs of medicines whatſoever. Let the patient therefore take four ſpoonfuls of the oily mixture, with the gum, every four hours, and, by way of aliment, barley-water, oatmeal gruel, caudle, panada, &c. chicken water may likewiſe be uſed, in caſe the febrile heat is not ſo great as to contra-indicate it.

It is cuſtomary to give diet very hot to women in child-bed. I muſt own, I take this method to be a very bad one, not only in the cure of this, and every other inflammatory diſeaſe, but in that of others whenever the patient is inwardly parched with heat; becauſe the fever, which is probably already too great, will be thereby increaſed. Beſides, experience teaches, that liquids may be given nearly cold, with as much ſafety and advantage in the lochial fever, as in any other; eſpecially when it runs very high, or the weather is very hot.

It is alſo common to adviſe the uſe of warm diet, and even plentifully, ſo that, whether there be any indication of an appetite or not, more is often given than the chylepoietic organs can properly digeſt. Now, ſhould this be done in the preſent caſe, the patient muſt be injured.

When about writing the above, I was, by experience, led to believe, that cleanlineſs, pure air, cool drinks, lenient purges, and early veneſection when the pulſe was full, were all eſſential articles, in the cure of this diſeaſe. But wiſhing to know the ſentiments of others upon theſe matters, I aſked ſeveral of my friends, particularly Sir John Pringle, Doctors Hunter, Lewis, Mackenzie, and Harvie, who all declined giving any deciſive anſwer; ſome even ſaying, that they knew nothing ſatisfactory about the cure. I was therefore obliged to give only my own; I ſay only, for, knowing that the common practice was then againſt me, I was afraid to write ſo fully as I wiſhed: But on reading Mr. White's treatiſe, publiſhed four years afterwards, it gave me

great pleaſure to find him, not only in the ſame opinion with myſelf, but that he had improved the ſubject greatly. But to return.

Tranquility of mind is another eſſential requiſite for obtaining the end propoſed, viz. appeaſing irritation: care therefore ſhould be taken to keep the patient free from company, or whatever will fatigue or cauſe uneaſineſs.

Thirdly, Of antiſeptics, pure air ſeems to me the moſt eſſential. I am well informed, that this fever and obſtruction occur more frequently in the lying-in-hoſpitals, than in private practice: what can this ariſe from, but the different ſtates of air? This, in my opinion, is the cauſe: for though very great care is taken in thoſe hoſpitals, yet as the apartments and furniture will imbibe ſome of the morbid effluvia ariſing from the patients, the air muſt be always more or leſs tainted.

Let the utmoſt care therefore be taken never to allow the patient to breathe any putrid ſteams ariſing from her own body, or that of any other. Cauſe the air in the room to be cooled and changed as occaſion requires, by opening a door, a window, or both together; eſpecially if the apartment be ſmall or the weather very hot; obſerving alſo to keep the ſurface of her body, the face excepted, properly covered during thoſe times, and indeed at others, ſo as to maintain but a very moderate degree of perſpiration. The bed curtains ſhould likewiſe be ſo far undrawn, as to leave its lower part quite open. See my *Friendly Cautions*, publiſhed in 1767.

A due attention having been thus paid to the management of the patient, to the ſtate of the pulſe, and primæ viæ at firſt ſetting off, the following mixture may then be taken:

I. B.

I. ℞. Mixturæ oleoſæ cum gummi ſeſcunciam,
Succi limonum drachmas tres,
Salis abſinthii ſcrupulum unum;
Miſce, fiat hauſtus quartâ quaque horâ ſumendus.

At any time, through the courſe of the diſeaſe, ſhould there be a great redundancy of vitiated humours in the primæ viæ, exciting retchings and vometings, as well as many liquid dejections, bleeding having been performed, as above ſtated, the ſtomach muſt be relieved by powder of ipecacoanha four grains, or, inſtead thereof, two drachms of the tincture, drinking about a pint of oatmeal tea after each rejection.

About two hours after this, the inteſtines may be cleanſed alſo by Sal. Cath. amar. ʒſs. or inſtead of it, pulv. rhæi gr. xv. vel ℈i. Such meaſures being taken (which, by the bye, I eſteem of great moment to the patient) an anodyne may be given, and the oily mixture uſed either alone or with ſome of the ſalt of wormwood mixture, as occaſion requires

If there be no diarrhœa, or if the patient be coſtive, (as but rarely happens in this caſe) the plan as above directed, may be obſerved, and the following enema uſed alſo.

II. ℞. Foliorum malvæ
———Matricariæ
Singulorum unciam unam,
Florum chamœmeli ſemiunciam, coque
in aquæ fontanæ quantitate ſufficiente
ad uncias duodecim, colaturæ adde
Olei olivarum uncias quatuor;
Miſce, et fiat enema pro occaſione injiciendum.

I have reaſon to believe, that if the method here propoſed, is duly obſerved, the termination of this diſeaſe will often be found not only favourable, but ſpeedy. But ſhould it change from the inflammatory diatheſis into a putrid one, in ſpite of all remedies, or ſhould it be in ſuch a ſituation, when the phyſician is called, the cure will neither be ſo eaſy, nor ſo certain. Nay, the danger of the caſe is too frequently proved by its event. However, things being in this ſtate, I know not of any better method of cure, than what is commonly uſed in other kinds of putrid fevers. Concerning which it will be neceſſary for the ſtudent to peruſe the writings of Huxham, Pringle, Monro, Macbride, and the very ingenious Alexander; but in preference to them all, Mr. White, on this ſubject.—Emetic tartar is now found to be of real uſe; James's Powder alſo, if properly given. And, to cleanſe the inteſtinal Tubes effectually, calomel may be taken, with a lenient purge, as occaſion requires.

§. VI. Now, accept the following caſes:

In April 1768, I was called ſeveral times to a patient, who, being in the laſt month of pregnancy, and often ſeized with a violent pain in her bowels, thought herſelf in labour. The grievance was ſometimes in the right hypochondrium, ſometimes acroſs the ſtomach, and at others over all the abdomen, attended with griping ſtools, and a forcing down, even ſo much, as to open the os uteri almoſt the breadth of half a crown. Glyſters of the emollient kind were injected, and anodynes taken afterwards, by which means ſome relief was obtained. But, the complaints recurring, notwithſtanding the alvine tube ſeemed ſufficiently open, I concluded, that the abdominal viſcera were affected, either by ſome vaſcular or glandular obſtructions; eſpecially as I had attended her in a caſe, which appeared to be of that kind, about two years before.

On the fifteenth, ſeven ounces of blood (which was very ſizy) were taken from the arm; an emollient enema was injected; and, after its return, an anodyne given. By this means ſhe continued eaſy a few days, and then the complaints returned as bad as ever. Thinking it neceſſary now to cleanſe the tube wholly, I ordered a purgative (conſiſting of Sal. Cath. amar. ʒvi.) to be given on the twenty-fifth early in the morning, which procured three copious ſtools. About ſix the ſame evening, labour began; at ſeven I came, and found the os uteri very well opened, with the child's head preſenting in the pelvis. In ſhort, the pains being now of the right kind, and the child but very ſmall, the delivery was compleated naturally in leſs than an hour. I ordered an anodyne to be taken an hour after delivery; and in about three hours after that, the following draught,

III. ℞. Spermatis cæti ſoluti drachmam dimidiam,
Confectionis cardiacæ grana quindecim,
Aquæ alexiteriæ ſimplicis ſeſcunciam,
——————ſpirituoſæ,
Syrupi ſimplicis, ſingulorum drachmas duas;
Miſce, & fiat hauſtus ſextâ quâque horâ ſumendus.

Caudle, with a little white wine was allowed, as her appetite required, and barley water when thirſty.

On the 16th I found the pulſe rather quicker than the natural ſtandard; there had been one ſtool; the lochia were not copious, but their colour was good; and the bowels were eaſy; ſo that I deſired the ſame plan to be obſerved, with only this alteration in the draught, viz.

viz. that the confectio cardiaca ſhould be left out, and aqua pulegii ſimplex ſubſtituted inſtead of the aqua alexiteria ſimplex.

On the 27th, about ten at night, I received a meſſage deſiring me to come, as ſoon as poſſible, ſhe being thought to be dying. I haſted thither, and found her toſſing about in the bed, and complaining of a violent pain in her belly. She had had ſeveral ſmall griping ſtools. There was no milk in the breaſts; nor had there been the leaſt appearance of the lochia all that day, as I was informed by herſelf, and thoſe about her. The pulſe was pretty full and very much hurried, I immediately took full eight ounces of blood, from the arm, which was ſtill ſizy. The regimen was deſired to be continued, and as to medicines the following draught;

IV. ℞. Mixturæ oleoſæ cum gummi uncias duas;
Fiat hauſtus quartâ quâque horâ ſumendus.

On the 28th I found her much eaſier; ſhe had ſlept; the purging was abated; and the pulſe was not ſo much hurried, though even now it beat an hundred times in a minute. But the lochia were returned, in pretty good quantity, and of a red colour.——The ſame aliments and medicines were continued.

On the 29th the pulſe was at eighty; the lochia were not quite ſo red; but there were now ſome ſigns of milk in the breaſts; the bowels were very eaſy, and there was no purging, ſo that I deſired the ſame plan to be purſued.

On the 2d of May, I ſaw her again. Her pulſe now was very full and quick, and ſhe complained of being coſtive, but her appetite was recovered. I adviſed her to be kept open by an aperient electuary, and to be bled again if the pain returned. From this time ſhe gradually recovered health, and is now well.

On the 27th of April, 1768, about eight in the morning, I delivered a young healty woman of a lively child. She had a very natural and ſpeedy labour. The common regimen and the hauſtus oleoſus cum gummi were preſcribed.

On the 28th I found her pulſe large, and above the natural ſtandard; which, by enquiry, appeared to me to have been occaſioned by the caudle's being made too ſtrong. The lochia were ſufficiently copious and of a good colour. The draught and common regimen were continued.

On the 29th I ſaw her about eleven in the forenoon, and found her pulſe better, and the lochia going on in the natural way; but there was no appearance yet of any milk in the breaſts. The regimen and draught were continued.

Soon after I was gone, without my directions, ſhe had her bed made, though not taken out of it, as I was informed, but ſhifted from ſide to ſide, 'till it was put to rights. At two o'clock ſhe had a copious ſtool; at three ſhe had a cold ſhivering, attended with great uneaſineſs over all her body, and ſoon afterwards two very looſe ſtools. At eight that evening, being ſent for, I found her pulſe very full and quick, but the rigours were gone, and ſhe felt herſelf not ſo uneaſy. Her face appeared fluſh'd; reſpirations were pretty quick; the tongue was a little white, and ſhe was thirſty. There was no milk in the breaſts, and the lochia had ſcarcely any red colour. She informed me that ſhe obſerved them to ſtop, ſoon after ſhe was moved in the bed. They were very little in quantity. But a diaphoreſis being now breaking forth, I adviſed only the regimen and draught to be continued.

On the 30th, at ten in the morning, I found ſhe had ſweat a little in the night. The pulſe was not quite ſo full, but was pretty quick, viz. at ninety. There was now ſcarce any appearance at all of the lochia; nor was there any milk in the breaſts. She complained of a

pain-

pain in the left ſide of the hypogaſtric region, which was increaſed by coughing, moving in the bed, or making any preſſure on the left foot; and it ſometimes extended to the region of the ſacrum; but I did not find the uterus above the pubis. Her face was fluſh'd, the whites of her eyes were a little inflamed, the countenance ſeemed ſomewhat hurried, and there was an oppreſſion about the breaſt. The tongue was white, the thirſt was conſiderable, and, ſince the preceding night there had been three more looſe ſtools.

Eight ounces of blood were now taken from the arm. The oily draught was continued; and, in caſe the purging increaſed, I deſired that her Abdomen ſhould be ſtrictly encompaſſed with a napkin, and that ſhe ſhould drink freely of chicken water.

In the evening I viſited her again, and found the pulſe at an hundred; nevertheleſs ſhe was remarkably better; for the countenance was more calm and not ſo much fluſhed; reſpiration was more free; the lochia were actually encreaſed; a conſiderable part of three cloths being wet and tinged of a reddiſh colour. There had been one ſtool; the pain was not ſo troubleſome; and ſhe had drank freely of the chicken water. The room being large, and the weather cool, I found little occaſion for giving any injunctions concerning the change of air. But the ſurface of her body I deſired to be kept always well covered.

On the firſt of May the pulſe was at eighty, the lochia were paler; the breaſts were now beginning to fill with milk; there had been no ſtools in the night; ſhe had ſlept well, and in other reſpects was much better. The ſame regimen and medicines were continued to the third, with only this difference, that the liquids were given moſtly cold. Her breaſts were now become leſs; but the lochia were more copious, and of a good red colour. Her appetite was returning; but, as there had been no ſtool ſince the thirtieth ult. an aperient was given; and there being a little cough, the oily draught was directed to be taken once in eight hours. Before the 20th day after delivery ſhe was perfectly well.

In

In this caſe, had I bled on the evening of the 29th, it perhaps would have been as well, if not better; but the diaphoreſis coming on, I was willing to ſee what nature could do. Next day the ſymptoms (as appeared to me) indicated more clearly a lochial fever. Bleeding, however, and the ſoft ſedative method being uſed, the event proved as above deſcribed.

On Tueſday the 5th of July, 1768, I was deſired to ſee a poor woman, aged thirty-five, who had been delivered on the preceding Wedneſday. The accounts given me by herſelf and women preſent, were, that a hand of the child came down at ſeven in the morning, and at noon the midwife effected the delivery, though with the greateſt difficulty, having often deſired aſſiſtance in the operation. The patient had felt great pain and ſoreneſs, as is uſual after ſuch deliveries. There was a large diſcharge of blood during the operation, and ſome blackiſh clots were diſcharged afterwards; but the next day the lochia leſſened. On Friday ſhe eat ſome chicken. On Saturday the lochia changed pale, and ſome ſigns of milk appeared in the breaſts; for they ſwelled a little: but that evening ſhe was ſeized with a violent pain in the left ſide of her thorax, attended with a ſhort cough. She had been feveriſh ever ſince delivery; but now, by her own account, ſhe became more ſo; upon which a male practitioner of midwifery was ſent for, and viſited her on Sunday and Monday; but the fever, pain, and cough continued till the Tueſday, when I firſt ſaw her.

She now breathed with much pain and difficulty, not ſeeming able to inflate the left lobe of her lungs above half. There was a hollowneſs about the eyes, appearing of a duſky ſhade, a quick look, and a little pinching in of the noſe. She ſweat profuſely, and told me, that her ſkin had been moiſt ever ſince labour. She had had no ſtool ſince delivery, nor had ſhe been bled. The tongue was dry, and there was great thirſt. She had an undulating pulſe, rather fuller than could have been expected at this time, but it beat an hundred and

thirty times in a minute. There was no milk in the breaſts, and the lochia had no red colour, but were entirely limpid, and appeared a little frothy on the cloths.

About twelve ounces of blood were immediately taken from the arm, after which the pulſe was reduced to an hundred and fifteen. I preſcribed the following medicines;

VI. ℞ Salis cathartici amari drachmas ſex,
Aquæ alexiteriæ ſimplicis uncias duas & ſemis,
Spiritus lavendulæ compoſiti drachmam dimidiam,
Miſce, fiat hauſtus ſtatim ſumendus.

VII. ℞ Decocti communis pro clyſteribus uncias duodecim,
Olei olivarum uncias tres,
Miſce, fiat enema ſeſquihorâ poſt hauſtus operationem injiciendum.
Veſperi applicetur veſicatorium affecto lateri.

VIII. ℞ Mixturæ oleoſæ cum gummi uncias octo,
Capiat cochlearia quatuor quartâ quâque horâ.

I directed that chicken water ſhould be drank freely, as ſoon as the alvus became open, but that neither this water, nor any other liquor ſhe took, ſhould be more than blood warm, nay rather colder; and, if ſhe deſired to have any other aliment before I could ſee her the next day, that it ſhould conſiſt only of panada, or water gruel.

On

On Wedneſday about eight in the morning her huſband came, and informed me, that ſhe was not worſe, though there had been no ſtool obtained by either draught or glyſter. I therefore ordered the following mixture;

IX. ℞ Salis cathartici amari ſeſcunciam,
Aquæ menthæ piperitidis ſimplicis uncias octo,
Spiritûs lavendulæ compoſiti drachmam dimidiam,
Miſce, et capiat cochlearia tria omni horâ, donec alvus ſemel, vel bis reſponderit.

And if this did not operate in three hours, to inject again an emollient glyſter.

About five in the afternoon I ſaw her, when three ſtools had been obtained by two doſes of the mixture. Her countenance looked now a little lively; the tongue was not ſo dry; the thirſt was not ſo great, and ſhe felt her bowels much relieved; the pulſe was at an hundred; the pain in the ſide was not ſo acute as before, and ſhe could inflate her lungs with more freedom; ſhe had ſtill a little cough, though not ſo troubleſome; and there was a kind of moiſture upon the ſkin.

The blood taken away the day before was very ſizy: I took away ten ounces more by a large orifice, which ſhe bore very well. This blood was alſo very ſizy. I deſired her to continue the uſe of the chicken water, the panada, and the oily mixture. I likewiſe ordered her linen to be changed; and that nothing, but what was very clean, ſhould remain about her. And, as the room was very ſmall, the weather alſo hot, I adviſed not only the door to be kept always open, but a window too when occaſion required.

On Thurſday I found that ſhe had had refreſhing ſlumbers in the night, and this morning twice ſlept two hours at a time; there had been two ſtools; the bliſter diſcharged freely; ſhe breathed ſtill better, but was not free from pain, and the pulſe was at an hundred and ten. The tongue was not ſo dry, nor was the thirſt ſo very great. She had perſpired moderately.

About twelve ounces of blood (which was ſtill very ſizy) were taken from the arm; ſhe bore this bleeding better than the former, and ſat up with more ſtrength during the operation. After bleeding, the pulſe was about an hundred, and a little fuller and more ſteady. The nurſe told me, that the cloths were ſtained of a more reddiſh colour with the lochia; but, being all waſhed, I could not be certain of this. The oily mixture was continued.

On Friday the pulſe was at an hundred; the lochia had begun to ſtain the cloths;—one copious ſtool;—the pain better, but not gone;—and the cough ſtill a little troubleſome. The mixture was continued, and one ſcruple of ſal nitri diſſolved in half a pint of barley water was ordered to be taken every four hours.

On Saturday the ſymptoms were as follows: the pulſe very full, and at an hundred;—the cough and pain a little troubleſome;—ſhe expectorated freely, and breathed more eaſily;—ſhe was a little thirſty;—her tongue was ſomewhat dry towards the root;—but her ſtrength was better; and ſhe had a deſire for aliments;—there was a copious ſediment in the urine of a good branny colour, and the cloths were ſtained of a reddiſh colour with the lochia. A few miliary eruptions appeared about the neck.

Ten ounces more of blood were taken from the arm, and the medicines repeated.

On Sunday the pulſe was at ninety: the lochia coloured the linen more red; ſhe had but very little pain in her ſide; but ſpit up matter mixed with blood. The ſame medicines were continued till Tueſday.

On

On that day I found her pulſe at ninety: there was ſtill ſome uterine diſcharge, but it was changed to a white colour; ſhe could breathe very eaſy; had very little cough, and ſpit up matter mixed with ſome blood.

The urine depoſited a very thick ſediment; the countenance looked freſh, and lively; ſhe ſlept well in the night; had very little thirſt, and her appetite was good. The medicines were continued, and a ſaline cathartic ordered to be taken next morning, after the operation of which, animal food was allowed, as her appetite required.

On Friday the fifteenth I found her dreſſed and ſitting up; her countenance had a very healthy appearance; the pulſe was come near to the natural ſtandard; her appetite was good; ſhe was not thirſty, and what ſhe expectorated was not bloody, nor mixed with ſo much matter.

After this time the appearance of matter, in what ſhe expectorated, went gradually off, as alſo the fever, and at this time, ſhe is in perfect health, Auguſt 22, 1768.

As the above caſe was a pleuriſy in the beginning; and afterwards a pleuro-peripneumony, it may by ſome be thought foreign to the preſent ſubject. I have inſerted it, becauſe I thought the means uſed in its cure ſerve to prove, that veneſection may be uſed with as much freedom in childbed, as at any other time, when neceſſity requires, and is attended with effects equally good. For, though when I began this cure, I was much afraid, that the inflammation had got the ſtart of me ſo far, as to terminate in a formation of matter, yet, by taking away about forty-four ounces of blood, and uſing the other means above-mentioned, the impoſthumation was rendered ſo inconſiderable, as not to prevent a ſpeedy and perfect recovery.

Moreover, though the quantity of the blood was ſo much diminiſhed, yet the lochia returned.

## CHAP. VIII.

## OF THE MILIARY FEVER.

WOMEN are ſometimes ſeized with a fever, in the month of childbed, accompanied with an eruption of many ſmall puſtules on the ſkin, about the ſize of millet ſeeds, from the reſemblance of which, the diſorder is called a miliary fever.

There is a diſeaſe like this, which befalls women at other times, and men likewiſe, which appears ſomewhat different in its nature, as well as ſymptoms. But here we ſhall ſpeak only of the former.

Cauſes. §. II. Many cauſes have been aſſigned for this fever; but I think, the moſt common are the following; Firſt, There are ſeaſons (though, as it ſeems to me, neither ſtated nor regular) which are more productive of it than others; yet, as far as I have ſeen, it is no ways infectious to thoſe who attend. Secondly, A pre-diſpoſition in the conſtitution, for ſome women have it during ſeveral lyings-in, which does not always continue, for they are often free from it through ſucceeding ones. Thirdly, Stimuli applied to the ſyſtem, ſuch as a violent labour, too hot a regimen, aliments taken very copiouſly in a day or two after delivery, &c. Fourthly, Expoſing the body imprudently to cold air. Fifthly, A ſudden or premature receſſion of milk from the breaſts; as alſo a ſuppreſſion of the lochia; but I muſt obſerve nevertheleſs, that I have known women ſeized with this fever after their conſtitutions have ſeemed much weakened by a profuſion of the lochia, and though milk ſtill remained in the breaſts. Nay, in ſome of theſe caſes, after the fever was gone, and the puſtules ſcaled off, I have known the milk return ſpontaneouſly,

and

and pretty copiouſly to the breaſts. Finally, any ſudden ſurprize, or violent agitation of the mind, as anger, fear, &c. will alſo cauſe this fever; ſome inſtances of which I have ſeen, where the event was fatal, although all poſſible means were uſed for the relief of the patient.

§. III. The diagnoſtics are generally as follows. The patient is ſeized with a cold ſhivering (ſometimes more than once) ſucceeded by a profuſe ſweat, ſmelling ſomewhat acid, and remarkably fœtid, eſpecially at firſt; the pulſe is pretty full; very quick, and ſometimes tremulous; the head is light, and often hurried; there is always an oppreſſion on the breaſt; a depreſſion of the ſpirits; frequent ſighings, and diſturbed ſleeps; ſometimes a pain in one hip, or in ſome part of the abdomen, reſembling a cholic; the tongue is generally moiſt, yet the thirſt is great; ſhe is inwardly hot, yet feels frequent horrors or chills, eſpecially if ſhe riſes in the bed, or uncovers her breaſts or arms. In proceſs of time ſhe feels an uneaſineſs, or general ſenſation of a pricking in the ſkin, immediately after which, there is an eruption of very ſmall puſtules, firſt, about the pit of the ſtomach, breaſt, neck, arms, hands, and between the fingers, and then more generally, though ſeldom over all the body. Diagnoſtics.

The puſtules are moſt commonly pellucid, or horny coloured, and feel hard to the touch. It is not unuſual for them to come ſuddenly out, and a great part of them to go as ſuddenly in again, eſpecially if the patient imprudently gets out of bed, or by any means checks the perſpiration or ſweat. As they appear, the fever, and moſt of the ſymptoms are alleviated; there is a copious ſweat, and commonly the urine depoſites a large ſediment: but when they diſappear, the fever, and ſymptoms, particularly the oppreſſion of the breaſt, and the depreſſion of the ſpirits recur again; and thus the caſe fluctuates ſometimes for weeks without obſerving (as far as I have been able

able to remark) any regular periods; and yet the patient apparently mends; the countenance looks more lively, and there is a new acquiſition of ſtrength after every remiſſion of the ſymptoms, till at laſt the recovery becomes perfect. The puſtules go off very ſlowly, and as they take their final leave, the ſkin itches, they peel off and not uncommonly carry ſome little ſcales of the epidermis with them.

Prognoſtics. §. IV. When in a few days, or a week after the attack, the puſtules come freely out, and remain on the ſkin; when upon the eruption, the head, breaſt, and ſpirits are relieved; the ſleep refreſhing; the pulſe becoming more ſoft, and not ſo very quick, a favourable event is portended: and when the urine depoſites a copious ſediment of a white or branny colour, a criſis is now begun, not only relieving the patient from this diſorder, but very commonly from every other conſequent on delivery. Nevertheleſs it is not to be expected, that the recovery will always prove ſpeedy, as may be underſtood from what has been ſaid in §. III.

But when the patient finds no relief by the eruption*; when the puſtules do not remain ſteadily out; when the fever, and ſymptoms already mentioned, recur with violence; the urine pale; and but little moiſture on the ſkin, or that which is, not being general, the caſe will not only be difficult, but the event alſo doubtful. If it has been long before the puſtules appeared; and on their eruption there be little or no abatement of the fever and ſymptoms; the head being hurried; the breaſt and ſpirits oppreſſed; the pulſe low and quick; no equal or kindly moiſture on the ſkin; no milk in the breaſts; little or no

* An eruption ſimilar to this may be produced by ſweating, which has made ſome deny the exiſtence of this fever; but a miliary eruption differs eſſentially from one produced by ſweating, in as much as it is critical and diminiſhes or carries off the ſymptoms of the fever, whereas the other does not.

lochia,

lochia, and the urine ſtill pale, or of a dirty cyder colour; the patient is in the moſt imminent danger.

§. V. In the cure of this fever, as a very particular regard is to be had to the patient's regimen, we ſhall for that purpoſe recommend what has been ſaid in Chap. 7, §. IV. Cure.

Veneſection is ſometimes neceſſary, as for inſtance, when the fever manifeſts itſelf on the third or fourth day after delivery, (before which time it ſeldom doth, but moſt commonly a few days later) and when the pulſe is pretty full and quick, the oppreſſion about the breaſts great, eſpecially if the lochia are obſtructed, and the lungs ſeem over-charged; or if there be a pain in the ſide, then bleed, and repeat it as occaſion requires.

In ſome caſes I have thought that bliſters have done good, and in others not.

As to internal medicines; thoſe that are either acid or very heating, have no place here. Such as are ſoft and gently ſudorific are uſed; and, I think, with propriety; for, ſo far as I can judge from my own experience, they have always had the beſt effect. With reſpect to their forms I ſhall only adduce a few, by way of example.

℞ Pulveris contrayervæ compoſiti ſcrupulum unum,
Spermatis ceti ſoluti drachmam dimidiam,
Aquæ alexiteriæ ſimplicis ſeſcunciam,
—— —— ſpirituoſæ,
Syrupi croci ſingulorum drachmas duas;
Miſce, fiat hauſtus ſexta quaque hora ſumendus.

Vel,

II ℞ Succi limonum unciam dimidiam,
Salis abſinthii quantum ſatis ad plenam ſaturationem,
Spermatis ceti ſoluti drachmam dimidiam,
Pulveris contrayervæ compoſiti ſcrupulum unum,
——— croci grana ſex,
Spiritus volat. aromat. guttas viginti,
Aquæ feniculi unciam unam,
—— alexiteriæ ſpirituoſæ,
Syrupi ſimplicis ſingulorum drachmas duas;
Miſce, fiat hauſtus quarta quaque hora ſumendus.

Vel,

III. ℞ Succi limonum unciam dimidiam,
Salis abſinthii quantum ſufficit,
Ad plenam ſaturationem,
Pulveris croci grana octo;
Mixturæ oleoſæ cum gummi unciam unam,
Aquæ nucis moſchatæ,
Syrupi croci ſingulorum drachmas duas,
Miſce, fiat hauſtus ut ſupra ſumendus.

If the eruption comes freely out; eſpecially when ſucceeded by an alleviation of the other ſymptoms, the above medicines or ſimilar ones may be taken for a few days.

But if it neither appears kindly, nor keeps properly out, the pulſe changing ſmaller, and the head growing hurried; or if there is much uneaſineſs in the abdomen, as ſome times happens from indurated fæces,

fœces, &c. diſcontinue, for a while, the ſudorifics, inject an emolient glyſter; and, if the patient is coſtive, repeat it till the alvine tube is ſufficiently relieved.

This, however, muſt be done with caution, leaſt the bowels be irritated, and a purging brought on, which may prove fatal.

When the inteſtinal tube has been relieved, though in this cautious manner, it is ſometimes neceſſary to give ſuch an opiate directly as that in Chap. II. and then the patient may continue in the uſe of one of the preceding draughts, or in that of thoſe following:

IV. ℞ Radicis contrayervæ contuſæ,
Semi drachmam, coque in
Aquæ puræ quantitate ſufficiente ad ſeſcunciam,
Colaturæ adde,
Spiritus minderri ſemi unciam,
Spermatis ceti ſoluti ſcrupulum unum,
Tincturæ croci drachmam dimidiam,
Syrupi ſimplicis drachmas duas;
Miſce, fiat hauſtus ſexta vel quarta quaque hora ſumendus.

Vel,

V. ℞ Decocti ſupra preſcripti unciam unam,
Mixturæ oleoſæ cum gummi ſemi unciam,
Calcis antimonii ſcrupulum unum,
Vini crocei drachmam ſemis,
Aquæ nucis moſchatæ,
Syrupi ſimplicis,
Singulorum drachmas duas;
Miſce, fiat hauſtus ſexta quaque hora ſumendus.

§. VI. As a farther explanation of this affair, take the following caſe:

On the ſecond of November, 1768, I was called to Mrs. D—, a ſmall ſized woman, whoſe catamenia, when not pregnant, returned every fifth week; and continued three days, the firſt very red, the ſecond not ſo high coloured, and the third quite pale. In the firſt month of pregnancy ſhe generally was coſtive, and troubled with ſickneſs at ſtomach, ſometimes vomiting yellow bitter matter. But towards the full reckoning ſhe had uſually frequent ſmall and griping ſtools.

She was now in the 35th year of her age, and in her fourth pregnancy. This birth proved lingering, and very laborious at laſt; occaſioned, as I imagine, from not only the ſmallneſs of the mother's pelvis, but from a compleat knot formed by the funis round one ankle of the infant.

The child was a lively boy, of a common ſize, weighing ſix pounds nine ounces and an half, averdupois weight. He was born at five minutes paſt eleven in the morning. Not the leaſt appearance of blood before his birth. The ſecundines came away in the ordinary way, about fifteen minutes afterwards, and weighed fifteen ounces three quarters. The placenta was of the uſual ſize and colour; and the veſſels were large and beautifully ramified. Between the birth of the child, and expulſion of the ſecundines, the lochia were ℥iv. ℥iii. ℈i. gr. iv. troy weight. When the delivery was finiſhed, the patient was directed to uſe white wine caudle, as her appetite required, to drink barley water when thirſty, and to take four ſpoonfuls of the mixtura oleoſa cum gummi every ſix hours. The room was to be kept properly warm, and every thing capable of irritation avoided as much as poſſible.

At the end of the firſt hour, reckoning from the expulſion of the ſecundines, the quantity of the lochia was ℥ii. ℥v. ℈ii. gr. viii.—The

pulſe

The pulſe now beat ninety times in a minute. At the end of the ſecond hour the lochia ʒiii. ʒi. ϑii. gr. iv.—The after pains moderate.—In the third, lochia ʒi. ʒiv. ϑi.—In the fourth, ℥i. ʒiv. ϑi. gr. xvi.—Colour very red.—In the fifth, ʒvi. ϑi. gr. x.—In the ſixth, ʒv.—In the ſeventh, ʒiii. ϑi.—Pulſe at eighty;—Pains a little forcing;—the fundus uteri remaining about midway betwixt navel and pubis as big as a man's fiſt,—a kindly moiſture over all the body;—near a pint of urine diſcharged, a little coloured by the lochia as it came away.—At the end of the ninth hour lochia ʒiii. ϑi. —At the twelfth, ℥ii. ʒvii. ϑi. gr. x. a clot included.—At the fifteenth, ʒii. ʒi. a large clot included.—At the eighteenth, ʒiv. ϑi.—At the twenty-firſt, ʒii. ϑi. gr. iv.—And at the twenty-fourth, ʒii.

Lochia firſt day and night.

| | | | | |
|---|---|---|---|---|
| 1ſt Six hours, | ℥xiv. | ʒvii. | ϑi. | gr. x. |
| 2d Ditto, | ʒiii. | ʒvi. | — | gr. x. |
| 3d Ditto, | ʒii. | ʒv. | ϑi. | — |
| 4th Ditto, | — | ʒiv. | ϑi. | gr. iv. |
| Total | ʒxxi. | ʒvii. | ϑi. | gr. iv. |

The patient laſt night reſted well;—head and breaſts very eaſy;—pulſe at ſixty;—the ſkin moderately moiſt;—no thirſt;—urine of the natural colour;—ſome pain about the loins, with a little forcing or bearing down of the rectum;—appetite being keen, ſome chicken was allowed, with an injunction to eat but very ſparingly.

The ſecond day, at the end of the third hour, lochia ʒii.—Colour not ſo red.—At that of the ſixth, ʒii. gr. x.—The breaſts having now milk, the child was allowed to ſuck, during which time the patient was ſeized with a cold chill, which held about fifteen minutes; —the caudle and oily mixture were directed to be uſed as before.— —At that of the ninth hour, lochia ʒiii. ϑii.—Breaſts filling with milk;—head ſtill eaſy;—a diaphoreſis over all the body;—pulſe at eighty;

eighty;—no thirſt;—urine of the natural colour.—At the end of the twelfth hour, lochia ʒiii.—Fifteenth, ʒii. ϑii.—The patient now awaked with a cold ſhivering, which continued near half an hour. The only reaſon ſhe could give for this was, that the cloth had ſlid from her, while ſhe ſlept, and that the fire had been let out by the neglect of the nurſe. However, ſome warm caudle being taken, a ſweat broke forth over all the body, legs and feet laſt. After this ſhe dozed a little, but was very thirſty.—At the end of the nineteenth, lochia ʒiii,—and at the twenty-fourth, ʒiv. ϑii. gr. x. —They now began to be a little fœtid, and to appear of a pale red. —Pulſe at an hundred and twenty-ſeven.—Head giddy;—breaſts ſwelled with milk, and pretty hard;—face a little fluſhed;—tongue dry;—much thirſt;—ſkin very moiſt;—darting and ſhifting pains in the head, breaſts, abdomen, and legs.—Feet burned, as ſhe expreſſed it;—the abdomen very tender when touched;—ſeveral rigors, eſpecially if ſhe moved, or was in the leaſt uncovered.—Urine a little high coloured, depoſiting a copious branny ſediment.—One ſtool.

Third day, at the end of the third hour, lochia ʒii.—The following draught given,

VI. ℞ Aquæ menthæ piperitidis ſimplicis ℥ii.
Salis Cathartici amari ℥ſs.
Spirit. lavend. compoſit. ʒſs. M.

At the end of the ſixth hour, lochia ʒii. ϑii. gr. v.—More fœtid; —colour very pale;—urine high coloured, depoſiting a wooly ſediment;—three ſtools;—head eaſier;—a fœtid profuſe ſweat over all the body; yet frequent rigors, and the pulſe much hurried;—ſome ſickneſs at ſtomach, but no great oppreſſion there;—a little fulneſs in the abdomen, but not ſo many darting pains;—the fundus uteri remained yet above the pubis nearly as large as before, and very tender

der when touched. In the left ſide of the hypogaſtric region there was alſo a tenderneſs, which was increaſed on drawing up the left leg, and there was a great ſoreneſs, as ſhe expreſſed it over all the body, but no eruption as yet to be ſeen.—The farinaceous aliments were continued, and the following draught directed:

VII. ℞ Succi limonum ℥ſs
Salis abſinthii ℥ſs
Efferveſcentiâ finitâ, adde
Mixturæ oleoſæ cum gummi ℥iſs,
Miſce, fiat hauſtus ſextâ quâque horâ ſumendus.

At the end of the ninth hour, lochia ℥iii. ℈ii. gr. v.—ſcarely red;—face not ſo fluſh'd;—tongue moiſt, and of the natural colour;—head a little hurried;—reſpiration quick;—pulſe at one hundred and fifteen, ſofter and ſmaller than at the third hour;—no rigors;—ſkin not ſo hot as in the morning;—a copious fœtid ſweat over the whole body;—the abdomen neither ſo full nor ſo tender;—two more ſtools, ſince which ſhe has been much eaſier;—a pain ſtill about the left pſoas-muſcle on raiſing the left leg.—At the twelfth hour, lochia ℥ii. ℈ii;—three more ſtools.—At the ſixteenth, lochia ℥iii;—two more ſtools. At the twentieth, lochia ℥ii;—this morning ſome refreſhing ſleep;—a little head ach;—breaſts very full of milk and hard;—pulſe one hundred and five;—a diaphoreſis over all the body;—ſkin not very hot;—tongue a little dry at the root;—ſome thirſt;—the abdomen ſtill tender, eſpecially near the pubis, but the uterus was now contracted ſo much as not to be felt above the pelvis;—no rigors ſince midnight. At the twenty-fourth, lochia ℥iſs;—pulſe at one hundred.

The fourth day, at the end of the third hour, lochia ℥iſs.—At the ſeventh, ℥ii.—Ninth ℥ii. ℈i;—ſtill fœtid, and now tinged a little more of a reddiſh colour; ſome head ach; breaſts filled with milk;

—pulſe at one hundred, rather hard and more full;—reſpiration not ſo ſhort;—ſtomach eaſy;—diaphoreſis as before;—the abdomen ſtill tender;—very little thirſt;—urine pale;—the medicines continued.—At the thirteenth, lochia ʒii.—At the ſeventeenth, ʒiv,—and at the twentieth, ʒii;—theſe laſt three quantities appeared of a pale red, and were gradually more fœtid.—At the twenty-fourth, lochia ʒi;—ſcarce any reddiſh caſt, but ſtill very fœtid.

The patient ſlept well laſt night;—pulſe now at ninety;—and neither ſo full nor hard;—breaſts replete with milk, and pretty hard, though all this time the child had ſucked;—tongue a little white and dry about the root;—diaphoreſis the ſame;—ſome thirſt;—a little inflation of the abdomen; the hypogaſtric region ſtill tender, when touched;—not ſo much pain about the pſoas on moving the leg;—a ſoreneſs in the left groin;—ſome inclination for aliment;—a pain about the ſacrum.—The following powder ordered:

VII. ℞ Tartari emetici grana duo,
Pulv. e chel. c. c. drachmam
Unam et dimidiam,
Miſce bene, et divide in chartas ſex
quarum capiat unam ſextâ quâque horâ.

The fifth day, at the end of the fifth hour, lochia ʒi. ϑi;—at this time the patient was ſeized with a pain in her back, coldneſs in her legs and feet, ſucceeded by a ſickneſs at ſtomach, and retching of bitter matter;—her head was hurried;—tongue white, and a little dry;—urine pale.—At the ninth hour, lochia ʒii, ϑi. gr. x. now a little reddiſh coloured;—head a little hurried;—pulſe at one hundred and ten;—ſkin very hot;—ſome miliary puſtules on the inſide of the arms;—tongue white, and ſomewhat dry, but clean;—pretty much thirſt;—frequent eructations;—a little ſick at ſtomach;

—a

a fulneſs and tenderneſs of the abdomen;—a very fœtid ſweat over the whole body;—urine pale.—At the thirteenth hour, lochia ʒii. gr. x. —more pale.—At the ſeventeenth, ʒii. gr. viii.—At the twentieth, ʒi. ϑi. gr. x.—and at the twenty-fourth, ʒi. ϑi. gr. xv.

Laſt night the patient reſted very badly;—ſometimes ſweat profuſely;—always very hot and thirſty;—urine made at ſeven in the morning was of a pale colour, and depoſited a copious mealy ſediment of a pinkiſh caſt;—at eleven the pulſe at ninety-two;—ſkin agreeably moiſt;—thirſt not ſo great;—many wandering darting pains about the body;—miliary puſtules ſmall, white, and confined ſtill to the inſides of the arms;—a little tightneſs about the breaſt;—one large ſtool;—the abdomen leſs tumified, but ſtill tender in the hypogaſtric region;—a darting pain about the ſacrum.—It appearing that the child was diſordered by ſucking the milk, the breaſts were wholly drawn by the nurſe.

The ſixth day, at the end of the fifth hour, pulſe at one hundred; tongue white and dry in the middle, eſpecially near the root;—much thirſt;—lochia ʒiv. gr. iv.;—urine of a cyder colour, depoſiting a woolly ſediment;—a bliſter applied between the ſhoulders, and draught (II. §. V.) ordered.—At the ninth, the patient troubled with a little cough, and tightneſs about the breaſt, yet expectorated pretty freely;—ſome pain in the head, and in the wriſts and legs;—tongue moiſt, and not ſo white;—ſtill no depreſſion on the ſpirits;—a gentle breathing over the body;—ſkin hot;—pulſe at one hundred;—lochia ʒiii. an acute pain darting from the os ſacrum to the right groin;—breaſts not ſo hard, but ſtill containing milk;—the aliments uſed, currant gruel and barley water drank cool;—urine the ſame as before;—miliary puſtules more out on the arms, and ſome alſo on the neck.—At the thirteenth, lochia ʒi.—At the ſeventeenth, ʒi. ϑi. gr. x;—no red caſt.—At the twenty-firſt ʒii;—colour the ſame. —At the twenty-fourth, lochia ʒi;—the patient ſlept better laſt night;

—but ſometimes awaked, hurried by darting pains in the cubits under the arm-pits, a cutting pain, as ſhe expreſſed it, in the back, and a pricking pain in the feet;—a chilneſs when any part of the body was uncovered;—a depreſſion now of the ſpirits;—no great thirſt;—tongue a little white but not dry;—ſhe obſerved that when the uterine diſcharge was greateſt, (for it varied, as may be ſeen by a review of the caſe) the pain downwards was always the leaſt;—pulſe as before;—a gentle ſweat over all the body;—the eruption more out on the hands, arms, and over all the breaſt;—no fulneſs nor tenderneſs of the abdomen;—urine of a pale ſaffron colour, depoſiting a woolly ſediment;—one large ſtool;—no appetite;—a little ſick at ſtomach;—the medicines preſcribed the day before repeated.

The ſeventh day, at the end of the fifth hour, lochia ʒi;—at the ninth, ℈ii;—the patient's head a little hurried;—ſome ſweat over all the body;—ſkin very hot;—pulſe at one hundred and five;—a pricking pain in the hands and under the arm-pits;—the eruption ſtill more out;—urine rather pale, of a dirty colour, with a woolly ſediment; two ſtools;—ſome ſickneſs at ſtomach;—milk in the breaſts;—bliſter roſe well;—the following draught preſcribed:

IX. ℞ Tartari emetici granum unum,
Aquæ bullientis uncias duas;
Miſce, fiat hauſtus ſtatim ſumendus.

This draught operated ſeveral times by vomit, bringing off a large quantity of green and yellow bitter matter;—two ſtools were alſo obtained by it.—At the thirteenth hour, no lochia.—At the ſeventeenth the ſame.—At the twenty-firſt the ſame.—At the twenty-fourth, ʒi;—no fœtor, nor any reddiſh caſt;—this morning the patient reſted very well;—head more eaſy, and intellects calm;—pulſe at ninety-ſix;—ſtomach and reſt of the abdominal viſcera very eaſy;—an itching in the

ſkin,

ſkin, but no pricking pain, except in the hands and feet;—no puſtules however in the latter;—tongue a little white, but moiſt and clean;—not much thirſt;—ſome inclination for aliment;—milk in the breaſts;—a diaphoreſis over all the body;—urine of a whey colour, with a woolly ſediment;—the farinaceous aliments, powder and mixture continued.

The eighth day, at the end of the ſixth hour, lochia ʒiv.—At the ninth, ʒii;—reddiſh coloured;—the patient now much eaſier every where;—the pulſe at eighty;—ſome milk in the breaſts;—gentle breathing on the ſkin;—urine of a cyder colour;—the miliary puſtules white, hard, and conſiderably enlarged;—breaſts often drawn by the nurſe;—ſpirits better.—At the end of the thirteenth, lochia ʒi. ℈i;—colour the ſame.—At the ſeventeenth, ʒiii.—At the twenty-firſt, ʒii; a profuſe ſweat over all the body, feeling cold to the patient;—pulſe at one hundred and ten.—At the twenty-fourth, lochia ʒi. ℈i. gr. x;—colour ſtill a little red;—pulſe at one hundred, rather more full and ſteady;—head clear and eaſy;—other ſymptoms much the ſame as before.

The ninth day, at the end of the eighth hour, lochia ʒi. ℈i;—red coloured;—fœtid;—the pulſe at eighty;—the eruption more out, ſome even on the legs and feet;—other ſymptoms much the ſame as before;—a bliſter applied to the inſide of each cubit, and the antimonial powder (VII.) given, increaſing the doſe to half a grain.—At the thirteenth, the lochia ℈i. gr. x;—a little red.—At the ſeventeenth, ʒi.—At the twentieth, ʒi. ℈i;—leſs red.—At the twenty-fourth, lochia ʒi;—leſs fœtid;—colour ſtill paler.—The patient ſlept more laſt night, than for ſeveral nights paſt;—pulſe at eighty;—puſtules very numerous over all the arms, breaſt, neck, and upper part of the feet;—milk in the breaſts of a good colour and conſiſtence;—tongue white, but not very dry;—ſome thirſt;—no appetite;—each bliſter had diſcharged an ounce of lymph;—urine of a ſaffron colour;

—the diaphoreſis very little but general;—the ſame aliments and medicines continued.

The tenth day, at the end of the fourth hour, lochia none;—at the ninth, ℈i;—ſhooting pains in the head, and axillæ;—the eruption extending over the back;—ſkin but very little moiſt;—ſenſation of burning in the feet;—pulſe at ninety;—tongue a little white, but clean;—thirſt moderate;—ſpirits a little depreſſed;—a tightneſs about the breaſt;—urine very pale;—no ſtool;—a kitchen glyſter ordered.—At the twenty-fourth, lochia ʒi;—no red colour;—the patient's reſt laſt night was diſturbed by the piles, a diſorder which alſo happened to her in the preceding lying-in;—every other ſymptom much the ſame as before.

The eleventh day, at the end of the ninth hour, lochia ʒi;—only white lymph, not fœtid;—pulſe full, and at ſixty-eight:—patient eaſier, and every ſymptom favourable.—At the ſeventeenth, lochia ℈i.—At the twenty-fourth ℈ii;—only lymph without any fœtor;—the patient reſted better laſt night than ſince the beginning of her illneſs;—no uneaſineſs any where, except in the right ankle, and about the anus, where the hæmorrhoidal veins were ſwelled externally;—pulſe ſtrong, and at eighty-eight;—an agreeable diaphoreſis over all the body;—urine a little of a cyder colour;—more inclination for aliment;—ſome weak broth allowed, but no meat;—one ſtool;—the alexipharmic powder continued.

The twelfth day, at the end of the ninth hour, lochia ℈i. gr. x;—pulſe full, ſtrong, and at ſixty-eight;—a diaphoreſis over all the body;—urine pale;—At the ſeventeenth, lochia ℈i.—At the twenty-fourth, ʒi;—the patient reſted pretty well laſt night, but awaked with a coldneſs in her legs;—this morning ſhe had a pain in the ſmall of her back, extending from thence at times round under the ſhort ribs to the ſternum;—an oppreſſion about the epigaſtric region;—very little moiſture on the ſkin;—eruption ſtill much out;—pulſe at eighty-ſix;—piles gone;—

gone;—tongue a little white, but very clean;—ſome thirſt;—urine pale, a little cloudy, and more lively coloured.

The thirteenth day, at the end of the ninth hour, no lochia;—pulſe at ninety, pretty full, and rather hard;—a pretty copious fœtid ſweat over all the body except the feet, which burned;—both legs and feet ſometimes cold;—milk ſtill in the breaſts;—no pain in the back;—urine pale, much in quantity, and a little cloudy;—another large ſtool.—At the eighteenth, lochia Ɔi.—At the twenty-fourth, Ɔi.—the patient ſlept pretty well laſt night;—pulſe at ninety;—more milk in the breaſts;—ſome depreſſure about the præcordia;—urine very pale, without either cloud or ſediment;—powder repeated.

The fourteenth day, at the end of the ninth hour, no lochia;—copious ſweat over the whole body, which felt very cold to the patient;—very little thirſt;—pulſe at ninety and pretty full;—urine more pale than in the morning;—a bliſter applied to each leg, and the ſaline mixture with volatiles ordered.—At the twentieth, lochia ʒi.—yellowiſh coloured.—At the twenty-fourth, ʒi. Ɔi;—not red, but fœtid;—the patient ſlept well laſt night;—a kindly moiſture on the body, without feeling cold to the patient;—ſome thirſt;—pulſe at eighty ſix;—ſome deſire of aliment;—the firſt miliary puſtules almoſt gone, but many ſmall ones appearing on the hands, and breaſts, and alſo ſome on the face;—urine more of a natural colour, and cloudy:

The fifteenth day, at the end of the tenth hour, lochia Ɔi;—pulſe at ſeventy-four;—at the end of the twenty-fourth, no lochia;—pulſe at eighty-ſix;—breaſts more filled with milk;—child allowed to ſuck;—ſkin moderately moiſt;—the miliary puſtules beginning to ſcale off;—bliſters had roſe well;—urine depoſiting a little ſediment;—one large ſtool;—an appetite for aliment;—the following mixture ordered:

—the diaphoreſis very little but general;—the ſame aliments and medicines continued.

The tenth day, at the end of the fourth hour, lochia none;—at the ninth, ℈i;—ſhooting pains in the head, and axillæ;—the eruption extending over the back;—ſkin but very little moiſt;—ſenſation of burning in the feet;—pulſe at ninety;—tongue a little white, but clean;—thirſt moderate;—ſpirits a little depreſſed;—a tightneſs about the breaſt;—urine very pale;—no ſtool;—a kitchen glyſter ordered.—At the twenty-fourth, lochia ʒi;—no red colour;—the patient's reſt laſt night was diſturbed by the piles, a diſorder which alſo happened to her in the preceding lying-in;—every other ſymptom much the ſame as before.

The eleventh day, at the end of the ninth hour, lochia ʒi;—only white lymph, not fœtid;—pulſe full, and at ſixty-eight:—patient eaſier, and every ſymptom favourable.—At the ſeventeenth, lochia ℈i.—At the twenty-fourth ℈ii;—only lymph without any fœtor;—the patient reſted better laſt night than ſince the beginning of her illneſs;—no uneaſineſs any where, except in the right ankle, and about the anus, where the hæmorrhoidal veins were ſwelled externally;—pulſe ſtrong, and at eighty-eight;—an agreeable diaphoreſis over all the body;—urine a little of a cyder colour;—more inclination for aliment;—ſome weak broth allowed, but no meat;—one ſtool;—the alexipharmic powder continued.

The twelfth day, at the end of the ninth hour, lochia ℈i. gr. x;—pulſe full, ſtrong, and at ſixty-eight;—a diaphoreſis over all the body;—urine pale;—At the ſeventeenth, lochia ℈i.—At the twenty-fourth, ʒi;—the patient reſted pretty well laſt night, but awaked with a coldneſs in her legs;—this morning ſhe had a pain in the ſmall of her back, extending from thence at times round under the ſhort ribs to the ſternum;—an oppreſſion about the epigaſtric region;—very little moiſture on the ſkin;—eruption ſtill much out;—pulſe at eighty-ſix;—piles gone;—

gone;—tongue a little white, but very clean;—ſome thirſt;—urine pale, a little cloudy, and more lively coloured.

The thirteenth day, at the end of the ninth hour, no lochia;—pulſe at ninety, pretty full, and rather hard;—a pretty copious fœtid ſweat over all the body except the feet, which burned;—both legs and feet ſometimes cold;—milk ſtill in the breaſts;—no pain in the back;—urine pale, much in quantity, and a little cloudy;—another large ſtool.—At the eighteenth, lochia ℈i.—At the twenty-fourth, ℈i.—the patient ſlept pretty well laſt night;—pulſe at ninety;—more milk in the breaſts;—ſome depreſſure about the præcordia;—urine very pale, without either cloud or ſediment;—powder repeated.

The fourteenth day, at the end of the ninth hour, no lochia;—copious ſweat over the whole body, which felt very cold to the patient;—very little thirſt;—pulſe at ninety and pretty full;—urine more pale than in the morning;—a bliſter applied to each leg, and the ſaline mixture with volatiles ordered.—At the twentieth, lochia ʒi.—yellowiſh coloured.—At the twenty-fourth, ʒi. ℈ì;—not red, but fœtid;—the patient ſlept well laſt night;—a kindly moiſture on the body, without feeling cold to the patient;—ſome thirſt;—pulſe at eighty ſix;—ſome deſire of aliment;—the firſt miliary puſtules almoſt gone, but many ſmall ones appearing on the hands, and breaſts, and alſo ſome on the face;—urine more of a natural colour, and cloudy:

The fifteenth day, at the end of the tenth hour, lochia ℈i;—pulſe at ſeventy-four;—at the end of the twenty-fourth, no lochia;—pulſe at eighty-ſix;—breaſts more filled with milk;—child allowed to ſuck;—ſkin moderately moiſt;—the miliary puſtules beginning to ſcale off;—bliſters had roſe well;—urine depoſiting a little ſediment;—one large ſtool;—an appetite for aliment;—the following mixture ordered:

X. ℞ Aquæ alexiteriæ ſimplicis uncias ſex,
—— —— ſpirituoſæ unciam unam,
Spiritus nitri dulcis drachmam unam,
—— volatilis aromatici,
Confectionis cardiacæ ana ſeſqui-drachmam,
Syrupi ſimplicis drachmas ſex ;
Miſce, fiat mixtura cujus capiat cochlearia tria quarta quaque hora.

Sixteenth day, at the end of the twenty-fourth hour, no lochia, pulſe at ſeventy-ſix ;—miliary eruption conſiderably gone ;—patient ſat up two hours yeſterday ;—countenance lively ;—ſtrength recovering ;—an increaſe of milk in the breaſts ;—one ſtool ;—urine pale and cloudy ;—mixture continued.

Seventeenth day, pulſe at eighty ;—in every other reſpect better ;—ſat up ſix hours.—On the eighteenth, every ſymptom much the ſame.—On the nineteenth, pulſe at ſeventy-ſix ;—the urine now depoſited a copious ſediment, of a light grey colour.

In the fourth week, an uterine efflux came on, and continued about three days, reſembling the catamenia. At the end of the month. the patient being rather too venturous in expoſing herſelf to the air, a ſmall degree of fever came on, attended with an eruption of ſome reddiſh pimples upon the ſkin ; but, having repaired to bed again, a ſweat broke out over all the body ;—the eruption went off ;—the urine depoſited a copious ſediment, and ſhe ſoon recovered.

Here was a miliary fever, as far as I could diſcover, independent of any error committed, in either the labour or lying-in* ; nor owing to the milk, or lochia ; theſe having continued in their natural courſes, as may be ſeen by the caſe.

* Chicken indeed had better not have been eaten ſo early ; but whether this could bring on ſuch a fever or not the reader may judge.

The

The quantity of the lochia each day was as follows;

| | | | | |
|---|---|---|---|---|
| 1ſt day | ʒxxi. | ʒvii. | Ɵi. | gr. iv. |
| 2 | ʒii. | ʒv. | Ɵi. | — |
| 3 | ʒii. | ʒi. | Ɵii. | — |
| 4 | ʒi. | ʒvi. | Ɵii. | gr. x. |
| 5 | ʒi. | ʒiii. | — | gr xiii. |
| 6 | ʒi. | ʒiv. | Ɵi. | gr. xiv. |
| 7 | — | ʒii. | Ɵii. | — |
| 8 | ʒi. | ʒv. | Ɵii. | gr. x. |
| 9 | — | ʒv. | — | gr. x. |
| 10 | — | ʒi. | Ɵi. | — |
| 11 | — | ʒii. | — | — |
| 12 | — | ʒi. | Ɵii. | gr. x. |
| 13 | — | — | Ɵii. | — |
| 14 | — | ʒii. | Ɵi. | — |
| 15 | — | — | Ɵi. | — |
| Total | ʒxxxv. | ʒiii. | — | gr. xi. |

§. VII. Authors have taken notice of a compound miliary fever; that is, when miliary puſtules are interſperſed with papillæ, commonly called a raſh; or with petechial eruptions, the ſmall-pox, or meaſles. Petechia.

This ſpecies ſeems to me to be rather ſymptomatic than idiopathic. However, as I have not ſeen ſuch a combination, with regard to the ſmall-pox and meaſles during the month of child-bed, I will not take upon me to treat of it.

Such indeed joined with, or rather ſubſequent on a petechial eruption, I have ſeen; and therefore I ſhall inſert the following caſe as a ſpecimen.

A patient of a very ſlender habit of body, troubled with a little fever, eſpecially at night, during the latter part of pregnancy, was ſafely delivered on the 1ſt of July, 1768.

The weather was extremely hot, and in the time of labour there happened one of the moſt violent tempeſts of lightning and thunder that I ever knew: but care was taken all the time to prevent her being over-heated.

After delivery ſhe had no fever, the lochia went on well, the breaſts filled at the uſual time, and ſhe felt herſelf better than ever ſhe had done in any preceding lying-in. As ſhe was coſtive however, the following draught was taken on the fifth day:

XI. ℞ Pulveris jalapii grana ſeptem,
——— rhei grana quinque,
Salis nitri grana quatuor,
Aquæ alexiteriæ ſimplicis ſeſcunciam,
—— ——— ſpirituoſæ,
Syrupi roſarum ſolutivi,
Singulorum drachmas duas;
Miſce, fiat hauſtus mane ſumendus.

Upon taking this aperient, an incredible number of ſtools enſued, making her at laſt very faint; but ſhe recovered by the next day, without any medical help.

I muſt obſerve, that the weather had been very variable ever ſince the tempeſt mentioned, there being hot gleams of ſunſhine, then thunder and lightning, ſucceeded again by ſhowers; and theſe by very hot weather.

On the ninth day her apartment was waſhed with warm water; and towards the evening ſhe dreſſed and ſat up in the ſame room till near eleven at night. Of this I was not informed till fourteen days afterwards.

Whilſt

Whilſt ſhe ſat up, ſhe obſerved that ſome ſpots like flea-bites came out on her face and arms; her head was giddy, and ſhe had ſucceſſions of fluſhings and faint ſweats.

On the tenth I found her as follows:

The ſkin dry and very hot, the pulſe about one hundred and ten, but pretty ſteady and not very full; the tongue was white but not dry, nor was there much thirſt. She had a pain between the ſhoulders, with a ſenſation of an opening, as if the back bone (as ſhe expreſs'd it) had been cut down the middle; and there was a depreſſure on the ſpirits; very little milk in the breaſts; and on the face and cubits many ſpecks of a livid or purpliſh colour, not only appeared, but ſome of them had riſen above the ſkin. The following plan was enjoined; the air in the room to be warmed a little with a fire, as that day happened to be remarkably cold; but to be kept as free from duſt, or any diſagreeable ſmell, as poſſible.

Her aliment to be barley water, chicken water, ſage or balm tea, water gruel, &c. all to be given rather cool; and as to medicines the following mixture.

XII. ℞ Succi limonum unciam unam,
Salis abſinthii quantum ſatis,
Ad plenam ſaturationem,
Aquæ alexiteriæ ſimplicis uncias duas,
——— ——— ſpirituoſæ,
Syrupi ſimplicis ſingulorum ſemiunciam;
Miſce, fiat mixtura cujus capiat dimidiam
ſexta quaque hora.

On the eleventh the fever was not ſo high; no petechial eruption on any part, except the face and cubits: theſe parts, however, were hot and dry, but all the reſt of the body was moiſt. The petechiæ

were now much broader, and ſome of them more riſen than before. There was no ſickneſs at the ſtomach, but there were ſeveral looſe ſtools, which not making the patient faint, I forbid any means being uſed to ſuppreſs them. Her ſleep was diſturbed and ſhe often awoke with a pain between the ſhoulders. The tongue was ſtill white, but not dry; nor was the thirſt great. The ſaline mixture was repeated.

On the twelfth every ſymptom was nearly the ſame, except the petechiæ, ſeveral of which were now become vibices as broad as half a crown, eſpecially on the cubits, on the back of the hands, and ſome on the palms. The ſame mixture was repeated. On the thirteenth every thing nearly in the ſame ſtate, only the bowels were not ſo lax. The mixture continued.

On the fourteenth the following powder was added to the mixture;

XIII. ℞ Pulveris contrayervæ compoſiti ſcrupulum unum,
Salis nitri grana quindecim;
Miſce, fiat pulvis ſexta quaque hora ſumendus cum cochlearibus quatuor mixturæ ſalinæ.

On the fifteenth the vibices looked paler; there was a diaphoreſis over all the body except the face and cubits; and, in every other reſpect, the patient appeared rather better than worſe; the medicines were therefore repeated; and as there had not been a ſtool for two days, the following draught was given;

XIV. ℞ Salis Cathartici amari drachmas duas,
Aquæ alexiteriæ ſimplicis uncias duas,
Spiritus lavendulæ compoſiti drachmam dimidiam,
Miſce, fiat hauſtus ſtatim ſumendus.

On

On the ſixteenth the face and arms were beginning to be moiſt. The pulſe was about ninety; the patient was indeed very low ſpirited and thought herſelf dying; but, conſidering every circumſtance, I ſtill perſiſted in telling both herſelf and her friends, that ſhe would do well. The powder and mixture were repeated. I muſt own, however, one great neglect; namely, I do not find in my notes any obſervations about the urine before this time, when it appeared very turbid, and dark or browniſh coloured.

On the ſeventeenth, the face and arms were moiſt as well as all the reſt of the body. The vibices were leſſened; and in ſeveral places remained only like freckles, what the patient drank had all this time been given cool, but now I deſired white wine whey to be given warm, eſpecially whilſt the ſweat was pretty copious. The powder and mixture were repeated.

On the eighteenth the urine was high coloured when made, ſoon became turbid, and then threw down a dark coloured ſediment. The tongue rather cleaner and very moiſt. The ſame medicines continued.

On the nineteenth every circumſtance nearly the ſame, except a few ulcers which now appeared on the under lip.

On the twentieth the weather was very hot. In the morning the patient ſeemed much the ſame as the day before, but in the evening I found her very faint. The ſweat was copious and extremely fœtid; the ulcerations on the lip were larger and very foul; the tongue, however, was pretty clean and moiſt, and her ſkin had more of a healthy caſt, the petechiæ being nearly gone; but in her countenance ſhe appeared greatly fatigued; there had been ſome looſe ſtools, and the urine had a duſky greeniſh colour; but depoſited a copious ſediment. I deſired that ſhe might immediately have clean linen, which was complied with. The room was ſprinkled with vinegar, and the bed quilt with lavender water; the windows and doors were ſet open till the room

was repleniſhed with freſh air; and when it became hot and diſagreeable I deſired the ſame ſhould be repeated, and that the patient ſhould ſit up in bed as often as ſhe could to breath freſh air, taking care at the ſame time to keep her body well covered; ſome red wine with cold water was allowed for drink; and as to medicines the following infuſion:

XV. ℞ Pulveris Corticis Peruviani unciam unam,
Aquæ alexiteriæ ſimplicis uncias octo,
—— —— ſpirituoſæ uncias duas;
Infunde ſine calore per ſex horas,
dein per chartam coletur;
Capiat colaturæ ægra uncias duas quarta quaque hora.

In the morning of the twenty-firſt the ulcers on the lip were very foul and more ſpread; and the urine had the greeniſh caſt; but, in all other reſpects, I thought the patient was ſomewhat better. The infuſion was repeated.

In the evening I found the fever higher; a bliſter was applied between the ſhoulders, and a doſe of the ſaline mixture ordered to be given every four hours during the febrile paroxyſm.

On the twenty-ſecond there was a moderate diaphoreſis over all the body; the pulſe was now at eighty, and, in all other reſpects, the patient was better, ſo that the Peruvian infuſion was given again.

On the twenty-third the petechiæ were nearly gone; but ſome miliary puſtules appeared on the flexion of the left arm, ſome between the fingers, and a few on the neck. The weather being ſtill extremely hot, I deſired the patient to ſit up often in bed, with her body well covered, while ſhe breathed freſh air from the windows which were kept open almoſt all day; and, as ſhe felt herſelf inwardly

inwardly very hot, I allowed her to drink half a pint of cold ſpring water, which ſhe did, and found refreſhment by it. The Peruvian infuſion was continued.

On the twenty-fourth the miliary puſtules were more numerous and ſome remarkably large, eſpecially on the inſide of the left arm. The pulſe was at eighty; there was a kindly ſweat over all the body, and the urine depoſited a copious ſediment, which was not ſo dark as before; there was a ſtool or two every day; the infuſion was continued.

On the twenty-fifth the countenance looked lively; the ulcers on the lip were beginning to heal; the tongue moiſt and much cleaner; the pulſe at eighty; the diaphoreſis went on; the urine appeared now of a citron colour, and was not ſo turbid. The miliary puſtules, however, were greatly enlarged, eſpecially one on the flexion of the left arm, which was become a chriſtaline full as big as an ordinary ſized grape. There were many on the breaſt as large as common peas; and under the arm-pits ſeveral more, ſome of which were burſt and begun to dry. The patient now having a deſire for acids, I allowed her to eat currants and drink oxycrate; and ſometimes for a change red wine and water. As to medicines the cortex was now given in both the tincture and decoction.

On the twenty-ſixth I found ſhe had reſted badly the night before; the ſkin was hot and not ſo moiſt as before; the pulſe was at ninety; the ſpirits were depreſſed; many of the puſtules had diſappeared; there was a chryſtaline indeed on the neck as large as a grape, which, being opened, diſcharged a limpid fluid. A pain in the calf of the legs, but, no inflammation nor any hardneſs to be obſerved; the urine darker coloured than the day before, a little cloudy but no good hypoſtaſis. I recommended the ſame regimen with only this difference; that if a ſweat came on, the patient ſhould drink whey made warm and pretty ſtrong; and, inſtead of the cortex in decoction, &c. the infuſion to be taken as before.

On

On the twenty-ſeventh, ſhe had reſted badly the night before; a ſenſation of a coldneſs in the feet, ſucceeded by heat, but there was little or no ſweat; a large quantity of pale urine had been made, the pulſe was ſmall and ſtill at ninety; the tongue was clean; no thirſt, nor was there much deſire for aliment. I deſired her to dreſs and ſit up now, as her ſtrength would bear it. In the evening I found her better, ſhe had been a little faint at firſt, but afterwards was refreſhed with the cool air admitted into the room, by opening the windows. She had now ſome deſire for aliment. The urine was high coloured and cloudy; and the lochia returned. The Peruvian infuſion repeated.

On the twenty-eighth, I found ſhe had reſted very well the night before, and perſpired freely over all the body; the lochia went on; the urine was cloudy, and more of a healthy colour than before; ſome deſire for ſolid aliment; the infuſion continued.

On the twenty-ninth, ſhe had felt her feet very hot the night before; ſhe had ſhort ſleeps, often awaking in ſtarts; the urine at firſt high coloured, and afterwards ſomewhat like cyder, but no hypoſtaſis; a little thirſty; faint ſweats over all the body except the feet; the tongue clean, and the lip nearly healed; the former puſtules were ſcaled off, but on the breaſt and pit of the ſtomach there was a plentiful crop of new ones, about the ſize of pins heads, white and remarkably tranſparent.

During the preceding week ſhe had a natural ſtool or two every day; the pulſe was now at ſeventy-ſix; I deſired her to keep in bed all day, and continue the infuſion with a ſcruple of the pulvis contrayervæ compoſitus added to each doſe.

On the thirtieth, ſhe had reſted well the night before, and there was a kindly diaphoreſis over the feet as well as all the reſt of the body; the lochia were gone; the pulſe was at ſixty; the body was laxative; a conſiderable quantity of urine had been made in the night, which

appeared

appeared of a whey colour, and depoſited a little quantity of a woolly ſediment.

On the thirty-firſt I was informed, that in the preceding evening, ſhe dreſſed and went down ſtairs, after which ſhe became faint, and felt a ſenſation of an extreme uneaſineſs over all the body. In the night her head had been a little hurried, but a ſweat breaking forth, ſhe grew eaſy. She obſerved that the miliary puſtules ſtruck in whilſt ſhe was out of bed; but at this time they were come out again. The urine was of a whey colour, but pretty large in quantity, eſpecially in the night; but now the pulſe was at ſixty, and there was a general diaphoreſis. I deſired her to keep in bed, and take the ſame medicines as before.

In the evening, ſhe thinking herſelf dying, I was ſent for; there was then a febrile paroxyſm; the pulſe was at eighty; the diaphoreſis however continued; one diſcharge of the urine had been high coloured, but what was excreted now was very pale. There was a miliary eruption, not only on the pit of the ſtomach, but over moſt of the thorax; I deſired her to be kept equally covered, to drink barley water and white wine whey, to continue in the uſe of the medicines every eight hours, and intermediately to take the following mixture:

XVI. ℞ Confectionis cardiacæ drachmas duas,
Pulveris bezoardici drachmam unam,
Aquæ feniculi uncias quinque,
——alexiteriæ ſpirituoſæ uncias duas,
Syrupi ſimplicis unciam unam;
Miſce, fiat mixtura cujus capiat cochlearia tria in languoribus.

Auguſt the firſt, ſhe had reſted well the night before; the pulſe was at ſixty-five; the diaphoreſis general; ſome petechiæ like freckles ſtill to

to be ſeen on the ſkin; and a few miliary puſtules appeared on the arms, as well as on the trunk; the urine whey coloured, or rather of a bilious caſt, depoſiting a woolly ſediment; one ſtool.

The patient now intimated that ſhe had a ſickneſs at the ſtomach, attended with ſome inclination to vomit; upon which I ordered the following emetic;

XVII. ℞ Vini ipecacoanhæ unciam dimidiam,
Aquæ puræ unciam unam,
Miſce, fiat hauſtus ſtatim ſumendus.

In the evening I found that this draught had operated, and that the ſtomach was eaſy; the pulſe was at ſeventy five, but the diaphoreſis went on, attended with an itching in the ſkin; I adviſed the patient to drink barley water, with hartſhorn ſhavings boiled in it; and, between whiles, ſome white wine whey. As to medicines, the cordial only, as laſt perſcribed

On the ſecond, ſhe had reſted pretty well the night before; the ſtomach eaſy; the diaphoreſis gentle and general; but the ſkin very hot, and the pulſe at eighty; the urine very pale, and its quantity copious. One ſtool.

XVIII. ℞ Pulveris contrayervæ compoſiti drachmas duas,
Sulphuris aurati antimonii grana duo;
Miſce bene, et divide in chartas ſex, quarum capiat unam quarta quaque hora.

On the third, ſhe had reſted very well the night before; her countenance more lively; the miliary puſtules nearly gone; the diaphoreſis moderate; the appetite recovered; for before I came, ſhe had eat ſome chicken

chicken, and ſaid ſhe could have eat more, had ſhe not been afraid of committing an error: the pulſe was now at eighty-five, probably owing to this repaſt. The urine ſtill pretty copious, but more of a citron colour, and cloudy. One ſtool. Powder repeated.

On the fourth, the miliary puſtules were entirely gone, but the petechiæ were more out on the arms. The pulſe was at eighty. The ſpirits were depreſſed; the catamenia had appeared; the urine was pretty copious, and ſome of it very pale: there was alſo more thirſt and leſs appetite, yet the patient did not loſe fleſh, but ſeemed gradually to mend in her habit of body. The ſame plan of cure continued.

On the fifth, ſhe had reſted well the night before, and doſed more to-day than ever ſince the beginning of the fever. The pulſe at ſeventy-ſix. The diaphoreſis general; thirſt not ſo great; the appetite better; the urine higher coloured and cloudy. The petechiæ however were freſh on the wriſts; the linen was changed again; and the powder was repeated.

On the ſixth, refreſhing ſleeps the night before; a copious and general ſweat; the petechiæ almoſt gone; the ſkin appearing of a freſh colour; the catamenia quite gone; the urine a little higher coloured and ſtill cloudy. The powder repeated.

On the ſeventh, refreſhing ſleeps the night before, attended with a very copious ſweat; the pulſe at ſeventy; no hypoſtaſis in the urine; the patient however eat to-day ſome lamb and french-beans with a very good appetite, and found herſelf eaſy afterwards.

On the eighth, neither ſo much ſleep nor ſweat; pulſe at ſeventy: urine citron coloured; every day a natural ſtool; the powder yet continued.

On the ninth, reſted very well the night before; ſweat freely; the petechiæ intirely gone; the pulſe at ſeventy; urine of a lively citron colour, depoſiting a little ſediment not quite ſo woolly as it had been

all the week before. The countenance very freſh, and the appetite recovered; ſo that the patient was now allowed to get out of bed and eat ſome toaſt and ale, which ſhe greatly deſired.

Whether the fomes of the above fever conſiſted moſt of the petechial or of the miliary kind, I will not take upon me to determine; but this I preſume is clear, that ſymptoms peculiar to each of theſe ſpecies of fevers, very evidently appeared.

I thought the bliſter did good; how it did ſo, I imagine now, was from the copious diſcharge which it occaſioned, probably of part of the morbid ſerum, which afterwards enlarged ſome of the miliary puſtules to ſuch an enormous ſize. But whether an application of more would have ſhortened the diſeaſe or not, I cannot ſay.

This I will own, that my view from the beginning was, Firſt, to bring on a diaphoreſis, and then to keep it up; Secondly, to guard againſt putrefaction; and Thirdly, to ſupport the patient by proper aliments and medicines, whilſt the fever (if I may be allowed the expreſſion) ran its natural courſe.

To attain theſe ends, I thought it beſt to have the ſurface of the patient's body always properly covered; to have her linen often ſhifted; and to have the air in the room frequently changed; ſo that what ſhe inſpired into the lungs might be freſh, and as free as poſſible from being tainted with the ſteams of her own body, or with any other impurity.

Theſe means, together with the uſe of medicines, eſpecially the cortex, ſeemed to me to be very efficacious in ſtopping the progreſs of the putrefaction. But I ſuſpected, that when the cortex was given, in tincture and decoction, the febrile ſymptoms were rather heightened, and therefore I did not repeat it in thoſe forms. The acids alſo ſeemed rather hurtful than beneficial, for which reaſon I am ſtill more confirmed in the opinion of thoſe who forbid them in miliary fevers.

However,

However, as I have given a detail of the ſymptoms, as well as of the means uſed, the reader is at liberty to judge for himſelf.

Swellings of the legs, &c.

§ VIII. With regard to ſwellings of the legs the ſubſtance of what I have ſeen in practice is as follows: In 1752 I was deſired to ſee a woman, aged about thirty, and in the third week of child-bed. Upon examination I found that the lochia had been pretty copious, and the patient, having ventured too early on buſineſs, had been ſeized with a fever, and afterwards with a ſwelling, which at firſt was extremely painful, but now very large, extending up the thighs, the ſkin appearing maculated with purpliſh ſtreaks eſpecially on the legs.

Her countenance had a very bad aſpect, and her pulſe was quick, ſmall, and irregular.

We had directly the aſſiſtance of an old Phyſician, who adviſed Scarifications to be made upon the legs; a diſcutient fotus to be applied; and a cardiac mixture conſiſting of confectio Cardiaca and Tinctura Corticis peruviani volatilis, &c. to be given.

A cupping ſcarificator was accordingly uſed, ſome ſerous blackiſh blood was diſcharged; but reſpiration grew more quick, the pulſe became more hurried, and in leſs than an hour the patient died.

In 1761, I was called to a patient who had lain in about three weeks. The circumſtances of this caſe were as follows:

Her countenance appeared very bad; the pulſe was ſmall, quick, and fluttering; reſpiration was very quick, attended with frequent ſighings. The lower limbs were much ſwelled; the ſkin, eſpecially of the legs appearing maculated with purpliſh ſtreaks, and capable of being eaſily pitted.

By the account of herſelf and nurſe the lochia had been pretty copious at firſt. She had been feveriſh above ten days. She had felt much pain in her legs, and one had ſwelled more than the other. They had been imbrocated with opodeldock, and inveloped in flannel by order of the

midwife; but it did not appear to me that any direct means of cure had been uſed.

I forewarned her husband and her friends of her approaching death. A mixture with Confectio Cardiaca and Spiritus valerianæ Volatilis was immediately given; but in leſs than two hours the event happened as was feared.

Since theſe two caſes, having been called more timely to ſeveral other patients in this way, I have met with better ſucceſs, tho' the ſymptoms began with much ſimilarity.

I muſt here obſerve that women who have been weak and ſickly during pregnancy; and who have had the lochia not only pretty copiouſly but rather longer than uſual, eſpecially if accompanied with ſome partial ſigns of a miliary fever, have appeared to me the moſt ſubject to thoſe ſwellings. The method of cure which I have uſed is as follows: The patient has been kept in bed. Perſpiration has been encouraged by the uſe of warm liquids, as white wine whey, or chicken water, &c. gentle ſudorific medicines, like thoſe above directed, have been given. The body has been opened every third or fourth day. Flannel cloaths wrung out of the common diſcutient fotus were applied as warm as ſhe could bear them, about half an hour, or more, and repeated every night and morning. During theſe applications care has been taken to keep her properly covered as well as dry; and in the intermediate hours, the legs being well dried, were enveloped with new flannel, which made them ſweat very freely.

Though the ſwellings have been ſo remarkably painful at firſt that the patient could not bear the weight of the bed cloaths, yet after the uſe of the fotus, they have gradually ſubſided and the pain leſſened, ſo that by the end of the month ſhe has been perfectly relieved.

Towards the latter end of the cure the miliary eruption has generally appeared about the neck and breaſt, and this being gone, or nearly

ſo,

ſo, as commonly happens very ſoon, aloetic purges have ſeemed to me to have had very good effects.

In 1760 a middle aged woman, of a pretty full habit of body, was ſeized with a fever, about the eighth day after a very natural delivery, and ſubſequent diſcharge of lochia. The milk ſoon left the breaſts; a few miliary puſtules came out about the neck, but ſoon diſappeared. The legs became painful, eſpecially about the calf and upper part of the tendo-achillis. In a day or two the left one became ſwelled, and a circumſcribed redneſs appeared on the ſkin. Cataplaſms made of bread, milk, and oil, were applied twice a day. The whole leg grew much ſwelled, but the redneſs, pain, and hardneſs being confined principally to the gaſtrocnemius, extending near its whole length, I concluded a ſuppuration would enſue, and therefore perſiſted in the uſe of the cataplaſm.

The patient had faintings and oppreſſions on her ſpirits, and her pulſe was ſmall and quick, ſo that it remained very doubtful for ſeveral days, whether the ſtrength of her conſtitution would be able or not to compleat maturation. I recommended the uſe of the following draught:

XIX. ℞ Pulveris corticis peruviani unciam unam,
Aquæ puræ uncias octo,
—— nucis moſchatæ uncias duas,
Sacchari albi drachmas ſex;
Infunde ſine calore per horas duodecim, dein colatur per chartam.

℞ Colaturæ uncias duas;
Fiat hauſtus quarta quaque hora ſumendus.

A mixture alſo, with confectio cardiaca, was given occaſionally.

The impoſthumation began on the gaſtrocnemius and gemillus; ſome alſo on the ſolæus; and at laſt extended from the ham to the upper part of the tendo-achillis. As

As ſoon as nature had pointed, the integuments being of a due tenuity, and the fluctuation eaſily felt, an inciſion was made from the ham to the ſolæus, by which aperture the diſcharge became ſo free as to prevent any miſchiefs happening to either the tendo-achillis, or to the tendons of the ſemi-nervoſus, ſemi membranoſus, and biceps muſcles, of which I was much afraid.

A ſuppuration enſued alſo on the ſolæus of the right leg, which being opened they were both dreſſed with balſamum terebinthinæ mixed with unguentum ſambucinum, and an emollient poultice of bread, milk, and oil over all.

The appetite now began to mend, the ſtrength recovered, the wounds digeſted, incarned and kindly cicatrized, ſo that in leſs than ſix weeks the cure was compleated. The patient is in good health at this time (July 21, 1768.) there is ſome confinement in extending the left leg, though ſhe limps but very little in walking.

CHAP.

## CHAP. IX.

## OF THE PAINFUL URGENCY TO URINE.

BESIDES the urinary complaint occurring in the ſtate of geſtation, as deſcribed in Part II. Chap. III. a frequent and painful urgency to urine happens alſo to ſome women at other times; eſpecially about the final ceſſation of the menſtrua, or a few years afterwards.

The moſt probable cauſes of this complaint, as far as I can diſcover, are the following, viz. a plethora of the uterine veſſels; any thing capable of exciting irritation, inflammation, and ulceration in the Subſtance of the bladder itſelf, whether an accumulation of blood, or tranſlation of peccant humour, &c. pus, carnous ſloughs, ſabulous concretions, &c. waſhed down into its cavity, conſequent on ſome diſeaſe in the kidneys; alſo ſome peculiar degree of irritability in the nervous ſyſtem, more eſpecially perhaps in that part of it which belongs to the uterus and urinary paſſages.

If this diſeaſe has been deſcribed by any author, it is more than I am acquainted with; therefore, in order to caſt what light I can upon the ſubject, I ſhall lay before the reader the following caſes.

Mrs. Pearce, at Great-Ealing, whilſt waſhing linen, was, in September 1758, ſeiz'd with a pain in the ſmall of her back, extending from thence to the navel, and from that down to the pubis, ſucceeded by a forcing about the uterus and bladder, occaſioning a frequent urgency to urine. Theſe complaints continued ſeveral days with ſuch violence, that ſhe could neither ſtand nor walk erect, then remitted a few days, never going entirely off, and returned as bad as ever.

She

She now applied to a Phyſician and Man-Midwife, and was under his care above half a year, but the diſorder ſtill increaſing, and an anaſarca coming on, he recommended her to St. George's-Hoſpital, where in about ſeven weeks ſhe was relieved from the dropſy; but the other complaints continued rather worſe than better, with the addition of ſome new ones, viz. a pain about the region of the ſtomach attended with retchings; a weight and pain about the pelvis and groins; a continual coſtiveneſs and frequent mictions, with great pain, and in ſmall quantities, not exceeding a ſpoonful at a time, which in the day was very clear, and in the night turbid. She next became a patient to a country practitioner near where ſhe lived, and afterwards to an old phyſician, for near two months without finding any relief.

On the tenth of February, 1760, (now a year and five months from the firſt attack) ſhe applied to me, ſhe was in the forty-third year of her age, and of a full habit of body; ſtill ſomewhat anaſarcous. The catamenia had ceaſed about five years. She could neither ſtand nor walk upright, but ſeemed as uneaſy as one in labour. In ſhort ſhe had not only all the ſymptoms above-deſcribed, but the mictions were ſo frequent that ſhe was obliged to ſit upon cloaths to receive the urine, as it came away. The inſide of the labia was inflamed but there appeared no ulcerations, nor any purulent diſcharge, yet there was ſo fœtid a ſmell, as to make me ſuſpect the caſe to be cancerous. There was an unuſual hardneſs and fulneſs about the perinæum and poſterior part of the vagina, but upon examination I found the uterus remarkably ſmall, conſidering her time of life, and higher in the pelvis, than could have been expected, conſidering the violent forcings with which ſhe had been afflicted. Tho' the poſterior part of the vagina ſeemed very full, as above mentioned, even protruding thro' the orifice with a wrinkled ſurface, yet, by a gentle preſſure, it eaſily went up. In ſhort I could not diſcover that the ſeat of the diſeaſe was either in this, the uterus, or rectum, tho' the latter was alſo carefully examined. I therefore paſſed the catheter, and found ſome reſiſtance to its point, juſt within the

bladder

bladder on the right ſide of the orifice, as if by ſome carnous ſubſtance. I ſearched with tenderneſs and caution all around, but could diſcover neither ſtone nor any other unuſual ſymptom, excepting that the bladder ſeemed much contracted; and upon withdrawing the catheter a few drops of blood followed. She obſerved to me that the ſymptoms were always increaſed by high ſeaſoned food, or ſtrong fermented liquors. She was a little feveriſh and thirſty.

I began the cure by veneſection, gentle laxatives, nitrous and oily medicines, and by the application of emollient unguents to the inſide of the pudendum. I next injected the bladder twice a-day with about four ounces of the following mixture:

℞. Pulveris gummi arabici unciam dimidiam,
Solve in aquæ puræ drachmas ſex,
cui gradatim adde,
Balſami copaivæ drachmas duas,
Olei amygdalarum dulcium uncias duas,
Aquæ puræ uncias ſex, miſce.

During the uſe of this ſhe took ſmall quantities of the mercurius dulcis, and gentle purges at proper intervals; ſome anodynes alſo when the complaints were urgent. She was kept in an horizontal poſition. She gradually became eaſier about the bladder, retained the urine in greater quantities, and diſcharged it intirely without pain. After this I placed a peſſary of the common form in the vagina; but although it was as large as could be well introduced, yet there were ſtill ſuch forcings, that it did not ſtay above twenty hours; upon which I contrived one of ſuch a form as is repreſented in Plate IX. This remained, and all the complaints went off in leſs than a month from the time I began the cure, ſo that ſhe returned to her ordinary buſineſs.

On the 26th of May ſhe was ſo well, that I ventured to diſcontinue the uſe of the peſſary; but in a few hours the vagina fell lower, and

the pain and urgency to urine returned, and continued ſo troubleſome for two days, that recourſe was again had to the peſſary; upon which ſhe became very eaſy, and remained ſo, (the peſſary being taken out and clean'd, and replaced about once a month) till the 8th of April, 1762, when it was intirely laid aſide, and an iſſue made in the leg. She has continued ever ſince in perfect health, having not the leaſt complaint about either uterus or bladder. The iſſue, by my requeſt, is ſtill kept open.

N. B. Neither by the patient's account, nor by my own obſervation, could I diſcover the leaſt gravel or gritty ſediment during the whole courſe of the diſeaſe.

Mrs. B. (a woman of a healthy habit of body, and chearful diſpoſition of mind) when about thirty three years of age, was ſeiz'd with a frequent urgency to urine; which complaint being taken for an inflammation of the bladder, ſhe was blooded, and took ſome cooling medicines; in fourteen days ſhe was perfectly well. She bore ſixteen children, had natural labours, grew corpulent, and, after fifty, had ſome gouty paroxyſms. At times ſhe felt a little pain in her back, and evacuated her urine with ſome difficulty; which was taken, by an old practitioner in phyſic and ſurgery, to be the gravel: Accordingly, he ordered medicines to cleanſe the kidneys, (as he expreſs'd it) but never any gravel or ſtone appeared, nor was there any thing remarkable in the urine, except now and then a little downy ſediment, which ſhe thought was in conſequence of the medicines uſed. In other reſpects ſhe enjoyed a very good ſtate of health, till the ſixty-firſt year of her age; when ſhe was ſeiz'd with a diſagreeable pruritus about the labia pudendi and foſſa magna, ſometimes attended with a heat and ſmarting, but not any complaint about the bladder.

In this manner ſhe went on to the ſixty-third year of her age, when ſhe became troubled with a frequent and dolorous urgency to urine. Upon the commencement of this, the pruritus went off, and never

never returned. The urinary complaint continued rather increaſing, till September, 1767, (the ſixty-fifth year of her age) when it grew ſo very troubleſome as to prevent her going abroad: But all this time her health was not much impaired. There was neither any fever, nor decay of appetite. Sometimes ſhe had the gout, but the urinary complaint was always the ſame. The quantity of urine diſcharged at once was often not a ſpoonful; commonly about three; but ſeldom more than ſix; and in twenty-four hours, the total ſcarce ever exceeded a quart, nor was there any ſtone or gravel to be ſeen in it.

In October her appetite began to fall off, ſhe obſerved that her complaint increaſed immediately upon eating or drinking, and likewiſe in a ſitting poſture. When ſhe ſtood ſhe was tolerably eaſy, and when lying, more ſo; excepting that a pain ſhot ſometimes down from the navel to the neck of the bladder. Every miction was preceded by a violent ſtraining, attended with a pricking pain, and ſucceeded by a ſmarting ſenſation, but never any dyſuria.

She applied to ſeveral phyſicians of eminence and obſerved their directions, but the diſorder continued with theſe additional ſymptoms, viz. great ſoreneſs about the urinary paſſage, which increaſed more by ſitting than by ſtanding; in an horizontal poſition ſhe was always eaſieſt. When ſhe went to ſtool, eſpecially after being coſtive, ſhe felt (as ſhe expreſs'd it) a ſenſation about the neck of the bladder, as if a ſore was tearing aſunder. When in bed ſhe alſo felt pain ſhoot down from the navel to the neck of the bladder; but this ſymptom never increas'd upon ſitting, ſtanding, or walking. The urine, when new made, was always of the natural colour, but having ſtood about an hour, a whitiſh brown mucus ſubſided, and ſome adhered to the veſſel. A ſmall bladder (as ſhe expreſs'd it) came away with the urine; which being opened and examined by the laſt phyſician who attended, its contents by him were judged to be of a calculous nature. This is the account which ſhe gave me of her caſe.

On the 29th of April, 1768, having returned into the country, ſhe came under my care. I found ſhe had all the ſymptoms above ſtated, but there was no fever. I paſſed the catheter in order to diſcover if there was any ſtone in the bladder, or any particular ſoreneſs in one part of it more than another, but found neither ſtone, nor any ſymptom denoting an ulcer; there was indeed a little tenderneſs at the inner orifice of the urethra, and the ſphincter ſeemed to contract pretty cloſely about the catheter.

I examined the uterus alſo, which did not ſeem enlarged, nor had it any unnatural hardneſs or tenderneſs; but there were two membranous faſciæ, which ran (one edge upwards and the other downwards) acroſs the upper part of the vagina, between its anterior and poſterior ſides, keeping the uterus higher than what is common, at her time of life. But upon preſſing againſt the neck of the bladder and urethra, ſhe felt no unuſual uneaſineſs nor pain. There was not the leaſt diſcharge from the uterus, nor did there appear any inflammation about the foſſa magna and labia pudendi.

I imagined that the neck and ſphincter of the bladder might be affected by an accumulation of ſome kind of humour, ſo as to occaſion this irritation, or frequent urgency to urine, and adviſed the ſoft and cooling regimen, together with the uſe of the mixtura oleoſa cum gummi; the bladder was alſo injected twice a day with the following mixture:

II. ℞ Pulveris gummi arabici drachmas duas et ſemis,
Aquæ roſarum unciam dimidiam,
Fiat mucilago, cui ſenſim adde
Olei amygdalarum dulcium drachmas ſeptem,
Aquæ roſarum uncias duas,
Syrupi e meconio unciam dimidiam, miſce.

On

On the 2d of May, ſhe was ſick at ſtomach, and vomited yellow bile. Seven ounces of blood were taken from the arm, and in the evening the following draught was given :

III. ℞ Vini Ipecacuanhæ unciam dimidiam,
Aquæ puræ unciam unam ; miſce.

By the operation of this gentle emetic, the ſtomach was relieved. The other medicines were continued, and an aperient electuary uſed to keep the body ſufficiently open. The injection uſually ſtaid about an hour, and afforded ſome relief, but ſoon required the addition of ten or fifteen drops of the tinctura thebaica. The urine was always of a natural colour, when newly made, without any appearance of mucus or matter in it ; but, having ſtood about an hour it depoſited a larger quantity of a glutinous ſubſtance than before, more reſembling pus and ſmelling very offenſive even at a conſiderable diſtance.

From the ſymptoms, eſpecially as ſhe had a little pain ſometimes about the loins, and from thence round towards the groins, I ſuſpected that this fœtid diſcharge came from the kidneys, and therefore adviſed the following pills :

IV. ℞ Terebinthinæ e chio drachmas duas,
Terræ japonicæ drachmam unam ;
Miſce, et fiant pilulæ numero triginta et ſex,
quarum capiat tres ter in die.

Some warm olive oil being now injected into the bladder by the patient's own deſire every day, and theſe pills continued about a month, the mucous diſcharge became leſs, and not ſo fœtid ; but the other complaints remained much the ſame, except that ſhe thought ſhe found

ſome

ſome eaſe by a diſcutient fotus, which by her own requeſt, was applied to the pudenda.

She never had any fever, but her appetite fell off; ſhe waſted a little, and her fleſh became flabby. The weather was now, at times, very hot, which aſſiſted the diſeaſe in reducing her ſtrength: For theſe reaſons I adviſed the uſe of the cortex peruvianus and balſamum traumaticum, which was continued to the 24th of June, without any material change in the caſe.

All medicines were omitted from this time to the 9th of July, when, the ſtomach and bowels being oppreſſed with bilious humours, the emetic was repeated, and a gentle cathartic given the next day. An anodyne draught was given when the complaints were very urgent, but nothing elſe till the 21ſt, when ſhe had an attack of the gout in her feet. Upon this the urine became entirely free from the morbid diſcharge and fœtid ſmell; and was excreted with more freedom and leſs frequency and pain. But as the gouty paroxyſm went off, all the ſymptoms recurred, only with this difference, that the ſediment of the urine was neither ſo purulent, ſo fœtid, nor ſo much in quantity.

After this the extractum cicutæ and a preparation of the cortex peruvianus was given, but the patient did not continue their uſe a ſufficient time for a fair trial of their effects.

On the 25th of Auguſt, having ſome talk with Dr. Hunter, about diſeaſes of this kind, he told me that he had known relief given by the uſe of bougies, which hint he had had from Dr. Cullins, profeſſor of phyſiology at Edinburgh.

On the 28th, I uſed one. The firſt day ſhe retained it about half an hour; the next day ſhe retained it two hours, and all that evening the urine came away in a larger ſtream, and with leſs pain and frequency, than for ſome time paſt. The third day it was uſed about the ſame length of time, but in the evening a purging coming on, (which ſhe lately had been ſubject to alternately with coſtiveneſs) the urgency

increaſed

increaſed for that night and moſt of the next day, which, together with the continuance of the diarrhæa, diſcouraged the patient from the uſe of it for near a week. Upon trying it again, I thought the urethra became not only more open, but alſo leſs tender; and the patient owned, that ſhe ſome times retained her urine longer, and that it came away with leſs pain; yet I could not prevail with her to uſe the bougie above ſeven or eight times in the whole. Soon after this ſhe had a ſickneſs at ſtomach, and vomited yellow bile, on which account the emetic was repeated. An anodyne was given occaſionally, when the urinary complaints were very urgent; and, by her own deſire, the fotus was again uſed.

On the 25th of September ſhe felt a pain about the loins, and next day a ſubſtance of a glandular appearance came away with the urine, about the ſize of a bean, which being dried upon paper, was manifeſtly fabulous. The next day about half a pint of urine was diſcharged at once, and ſhe was eaſier about the bladder.

On the 29th ſhe felt a ſmarter pain (as ſhe expreſs'd it) about the loins, than ever ſhe had done ſince the beginning of her illneſs; and on the day following a little more of the gritty ſubſtance came away with the urine. Upon this I adviſed the uſe of the terebinthinate pills, and mixtura oleoſa cum gummi.

On the 3d of October ſhe was troubled with frequent retchings, and pain about the ſtomach and loins; the urine was clear, and without any morbid ſmell. The following draught was ordered:

℞ Olei refini unciam dimidiam,
Aquæ menthæ piperitidis ſimplicis
unciam unam et dimidiam,
Miſce, fiat hauſtus mane ſumendus.

On the fifth, freely purged by the above draught;—the ſtools remarkably offenſive;—ſickneſs and pain about the ſtomach ſtill troubleſome,

ſome, as alſo a pain extending from the loins, under the falſe ribs, round towards the navel;—urine ſtill clear as before;—an anodyne draught repeated.

On the ſixteenth, urinary complaint ſtill the ſame; the ſickneſs at ſtomach very troubleſome, and vomitings alſo on moving the body;—very little appetite;—a ſudden waſting of the body;—no medicines uſed.

On the firſt of November, retchings not quite ſo troubleſome;—ſtomach bears a little aliment of the liquid kind;—the ſtrength greatly reduced;—much inclination to ſleep;—urine clear;—ſometimes retained about three hours, and then to the quantity of four ounces diſcharged with leſs pain than before.

She having been lately unwilling to take medicines, or to try any other means of cure, an anodyne only had been given once or twice a week.

She now waſted faſt, her ſtrength failed, the complaint about the bladder was leſs troubleſome. On the tenth ſhe died*.

On the twelfth Mr. Hunter did me the favour to open the body. The appearances were as follows: The liver leſs than the uſual ſize;—two ſtones in the gall bladder, one as large as a walnut, and the other about the bulk of a pea. The ducts of the liver and gall bladder not in the leaſt obſtructed;—kidneys ſmaller than common;—their external ſurface irregular;—their ſubſtance maculated, or of a variegated colour;—ſome ſtony concretions in the mamillæ;—but nothing unuſual either in the pelviſes or ureters.—Bladder of the ordinary ſize;—its inner coat inflamed, irregular, and ulcerated much in ſeveral places, eſpecially on the right ſide;—on one ſide of the inner orifice of the urethra there was a ſmall ulcer. The urethra itſelf appeared red, its veſſels being filled with blood.

* This hiſtory is inſerted verbatim, as wrote before the body was opened.

The

The uterus, with its broad ligaments, adhered poſteriorly to the rectum and parts adjacent. The os tincæ and neck of the uterus were entirely obliterated; and the poſterior part of the vagina, adhering to the os uteri, formed a kind of frænum. The uterus contained a kind of bloody mucus in its cavity, but there was nothing remarkable in the ſubſtance of the uterus, only, that it was a little flabby.

On the twelfth of December, 1760, I was called to a patient who had born fourteen children, ſeveral of whoſe births had been very laborious, but were effected in the natural way. She was then in the fifty-ninth year of her age, of a corpulent and healthy habit of body, as well as equable and chearful diſpoſition of mind. She had got cold in one lying-in, after which ſhe felt a pain in the ſmall of her back, but never had any complaint about either the uterus or bladder, till a few weeks before the time I was ſent for, when ſhe was ſeized with an inſtantaneous and frequent urgency to urine, attended with a cutting pain, and a violent ſtraining or forcing down, but very little ſenſe of heat. The quantity of urine diſcharged at once very often did not exceed a tea ſpoonful, and never an ounce; nor did the total in twenty-four hours ever exceed what was natural. Upon ſearching with the catheter, I found no ſtone in the bladder, nor any unuſual tenderneſs, except at the inner orifice, where the ſphincter alſo ſeemed to contract more forcibly than what is natural. There had been no pain in the loins, groins, or thighs; no gravel to occaſion ſuch an uneaſineſs; no diſcharge of mucus, or of matter, either with the urine or any other way.

She had ſometimes a pruritus about the foſſa magna, but never any tenderneſs or ſoreneſs there. I could not find any thing wrong in regard to the uterus. Yet ſhe often ſcream'd out like one in labour, and ſaid that ſhe had the ſame ſenſation as if the head of a child was coming into the world. Theſe complaints continued both day and night,

ſo that her ſleep was diſturbed. Her appetite alſo fail'd, and ſhe became thirſty. The pulſe was quick, full, and hard.

I attempted the cure by veneſection, gentle cathartics, emollient clyſters, and the uſe of the mixtura oleoſa cum gummi, ſome tinctura thebaica being occaſionally added to procure eaſe. The bladder was alſo injected with the mixture, firſt alone, and afterwards at times with twenty drops of the above tincture added to it. I likewiſe tried lime water, but this cauſed ſo much pain that I ſoon deſiſted.

Having continued in the uſe of the above means to the middle of May, 1761, (during which time, the blood being always fizy, ſhe was bled ſix times) the complaints were all gone. But, as they went off, a flux of the humour fell upon the inſide of one leg, a little above the ancle, where an ulcer ſoon formed. This ſore was very painful at firſt.

I recommended the uſe of emollient cataplaſms and unguents, in order to promote an eaſy and free diſcharge of the humour. I adviſed her to keep it very clean, and never to apply any thing with a deſign to dry it up, till it was diſpoſed to do ſo of itſelf. This plan was obſerved to the year 1767, during which time ſhe never had the leaſt complaint about the urethra, uterus, or bladder,

In October 1767, the ulcer healed up ſpontaneouſly; about three months afterwards a diarrhæa came on, and continued troubleſome near two months: and in the beginning of March, 1768, ſhe had a return of all the complaints about the bladder, not only with greater violence, but with ſome additional ſymptoms, viz. an increaſe of pain upon walking, ſitting up, and going to ſtool; a forcing to evacuate urine immediately upon drinking beer, wine, or any other fermented liquor. But eatables, broth, gruel, or any kind of ſimple water, tea, &c. hot or cold, never gave any uneaſineſs.

She obſerved alſo, whenever the forcings of urine came on, that a great pain ran down (as ſhe expreſs'd it) from the collar bone (moſtly

(moſtly of the right ſide) to the neck of the bladder, and drew her together, as if by a cord. The pulſe was full, pretty hard, and quick; the tongue dry, and ſhe was thirſty. She had but little appetite; her body was ſometimes bound, and at others looſe.

I attempted the cure again by veneſection and the uſe of the oily mixture, ſometimes joined with the ſalt of wormwood mixture, and, at others with nitre, ſhe being feveriſh, and the blood very ſizy.

Her body was occaſionally opened by gentle aperients; emollient glyſters were uſed, ſometimes adding about twenty or thirty drops of the tinctura thebaica, which, for ſome time gave more relief this way, than by the mouth. I alſo tried a veſicatory upon the loins, but all to no purpoſe; for the complaints grew rather worſe than better.

In July, ſhe applied to an old phyſician, who declared the caſe to be cancerous. Having uſed every means he could think of without ſucceſs, he declined attending any longer.

In the beginning of Auguſt, ſhe had a great ſickneſs at ſtomach, and frequent retchings; but never any pain about the loins or groins, or any appearance of gravel.

On the twenty-eighth of Auguſt, I found her greatly emaciated; the pulſe at ninety, full, and rather hard; the tongue white, very dry, and rough; ſhe had a diarrhæa, and was conſtantly thirſty. I now placed a bougie in the urethra, and deſired it to be retained about two hours, if ſhe could bear it, which ſhe did; but the pain not being alleviated thereby, ſhe had not reſolution to repeat the trial. And indeed the conſtitution was now ſo far exhauſted, that a palliative method ſeemed to be the only reſource. I therefore adviſed her to continue the uſe of ſome anodyne pills, which the Doctor had preſcribed, and in caſe they failed, to uſe thoſe following, viz.

VI. ℞. Opii colati ſcrupulum unum,
Extracti glycyrrhyzæ drachmam unam,
Miſce, fiant pilulæ numero viginti,
quarum capiat unam ſemel vel bis in die.

On the twenty-fifth of September ſhe died; I was very deſirous of having the body opened, in order to attain a more certain knowledge of this diſeaſe, but her relations would not permit it.

CHAP.

## CHAP. X.

### OF THE DESCENSION, PROTRUSION, AND INVERSION OF THE UTERUS.

BY deſcenſion, is here meant, a falling down of the uterus from its natural ſituation, till the os tincæ bears upon the os vaginæ; by protruſion, a continuance of this deſcenſion, till the uterus comes intirely through the os vaginæ, making a tumor without the vulva; and by inverſion, a turning of the uterus inſide outwards.

Cauſes. The two former of theſe complaints may ariſe from the ſame cauſes, as for inſtance, a general laxity of the fibres; ſome peculiar or preternatural diſpoſition of the uterine ligaments to lengthen; hard work, eſpecially ſuch as requires much ſtanding; violent ſtrains by falls, lifting heavy weights, coughing, &c. The fluor albus has been aſſigned for a cauſe, as alſo difficult births. Though I cannot deny but they may, yet I muſt own, that I never met with a caſe that could be ſolely imputed to either, eſpecially the former. Of the latter, however, there is much probability, and the more, if ſuch means as directed in Part III. Chap. VI. §. VI. are not timely uſed.

As to an Inverſion, I think it very rarely, if ever, happens, but by an unſkilful application of art in time of parturition. Women therefore, it is to be hoped, conſidering the improved ſtate of midwifery, are now ſecured from this evil.

About fifteen years ago I was called to a caſe, where an inverſion had almoſt taken place, a midwife (though of forty years practice) having brought down a conſiderable part of the uterus, thinking it was ſomething which ought to come away previous to another child, which, ſhe imagined was ſtill behind: Nor could I intirely convince her

her and the reſt of the women of the contrary, though I replaced the uterus, and ſeparated part of the placenta, which had been left adhering to it. I muſt excuſe them thus far: The woman had an aſcites, which kept up her bulk after the birth of the child, and probably too occaſioned a fulneſs in the pelvis. The caſe at laſt however convinced them; for, towards the end of the month, about three gallons of water came away per veſicam in leſs than two days. This happy event could hardly be attributed to the efficacy of the medicines, which I had preſcribed. They conſiſted indeed of aloes, ſoap, oil of juniper, and ſal diureticus, but moſtly in very ſmall doſes, on account of the patient's ſituation. The recovery was perfect, and the woman had children afterwards. But to return;

There are many inſtances given by authors of eminence, where the uterus has been intirely inverted by the midwife. See Giffard's Caſes of Midwifery, Caſe 176; Chapman P. 123 Caſe 29; La Motte lib. 5, Chap. 10 and 11; Smellie's Works, Vol 3, Collection 44, Caſe 3d. &c. &c.

Diagnoſtics

§ II. A deſcenſion is generally attended with a ſenſation of a bearing down, an uneaſineſs about the loins, and pelvis, together with a difficulty in diſcharging the urine. By the touch the os tincæ may be found near the os vaginæ and the point of the finger being paſſed round the cervix uteri the vagina may be felt encompaſſing it. To form an idea of this, let the os uteri (Plate II. Fig. 9.) be ſuppoſed to have deſcended to the os vaginæ, P. Beſides there is no excreſcence or any thing elſe to be diſcovered in the paſſage.

A protruſion is attended with a weight, a forcing and an uneaſineſs in both loins and pelvis, in a greater degree than in the former caſe. The urine is commonly obſtructed ſo much, that the patient cannot diſcharge it herſelf, till the uterus is replaced: The reaſon of this is obvious, if we conſider the connection of the parts, (See Part I. Chap.

Chap. V. Plate II. A B D &c.) and ſuppoſe the uterus to have come intirely without the labia pudendi. The vagina being now wholly inverted, covers all the uterus, except the fundus and the orifice; and the ſurface of its inner membrane, having now become the exterior one of the tumor, appears of a pale reddiſh colour, reſembling the membrane, which lines the foſſa magna. The os uteri is ſtill downwards, and may be found a little behind the center of the tumor. The bulk of the tumor, if not inflamed, nor preternaturally enlarged, is about the ſize of the uterus, Plate X. the vagina being added.

Some think it difficult to diſtinguiſh a protruſion from a polypus in the uterine paſſage. Though my own experience will not perhaps enable me to aſcertain this point fully, yet I cannot help thinking that they may be diſtinguiſhed by the following ſigns, viz.

In caſe of a polypus's ſpringing from the uterus, a finger or rather catheter may be inſinuated the whole length of the vagina, and then moved ſideways quite round: If it ariſes from the vagina, the inſtrument may alſo be paſſed as high, but the root of the polypus will prevent its going quite round. Whereas in a protuſion, the vagina is ſo much inverted, and pulled down by the uterus, as to leave no paſſage, but only a circular ſulcus about half an inch deep within the foſſa magna. Something is to be diſcovered likewiſe by paſſing the catheter into the bladder; for in a protruſion this viſcus is diſplaced, as above obſerved, but in caſe of a polypus its poſition is generally natural, and there is no ſuppreſſion of urine.

An inverſion may be known by its rough or fibrous ſurface; by its form and ſize reſembling a florence flaſk; by the connection of its upper end all round to the os vaginæ; ſuch errors having preceded as mentioned §. I. or any incidents capable of producing the ſame effects.

§. III. A Deſcenſion commonly terminates in a protruſion, ſubjecting the patient to many evils; as for inſtance, violent pain; an expoſure Prognoſtics.

poſure of the inner ſurface of the vagina to the action of the air, and friction of the thighs and cloaths; inflammation, excoriation, ulceration, carcinomata, ſphacelation, &c. But if timely attention and proper aſſiſtance are given, all or moſt of theſe may be often avoided.

An inverſion, though quickly replaced, has been generally found mortal, according to the accounts of the beſt practitioners.

Cure of a Deſcenſion.

§ IV. The method of cure, in regard to a deſcenſion and protruſion, is not only ſimple (as appears to me) but ſimilar. It conſiſts in the uſe of a proper peſſary, and in keeping the body for a while in an horizontal poſition, the cortex peruvianus and ſuch other medicines, as will help to corrugate the fibres, may be given, and diſcutient and reſtringent fomentations uſed; but I lay the greateſt ſtreſs on the uſe of the peſſary. Before I deſcribe the manner of applying this, I ſhall lay before the reader the following caſes.

Caſe I.

In 1752 I was called to a ſlender woman, aged nineteen, whoſe uterus had protruded, and been without the vulva ſeveral days before I ſaw her. Her account of the caſe was as follows: She had been employed in hard work, which required much ſtanding; ſoon after lifting a heavy weight, ſhe firſt felt a pain in her back, and a bearing down, which was ſucceeded by a mucous diſcharge from the vagina, and about a week afterwards the ſwelling appeared.

In this caſe the wrinkles of the vagina were more conſpicuous, and its whole ſurface appeared more of a darkiſh red caſt, than in any other I have ſeen. The reduction was alſo more difficult; yet was compleated by a gradual and cautious preſſure of the hand; a ſmall peſſary was placed in the vagina, and the patient injoined to lie in bed, which ſhe did about a month. During this time the peſſary was taken out, cleaned, and replaced, as occaſion required. She now finding no complaint, was allowed to return to her ſervice. The uſe of the peſſary was continued about a month longer, and then left off; ſince which

time

Plate IX.

Fig.1.

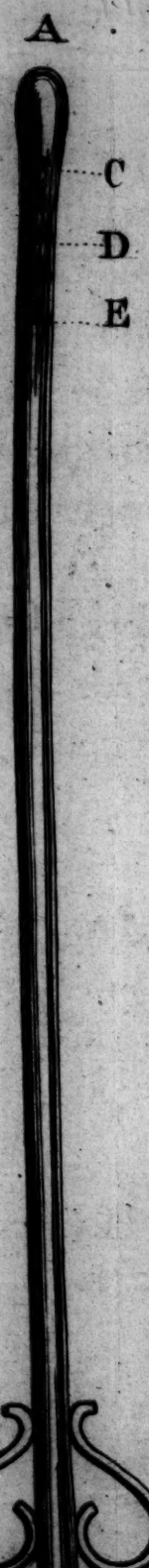



Fig.2.

Fig.3.

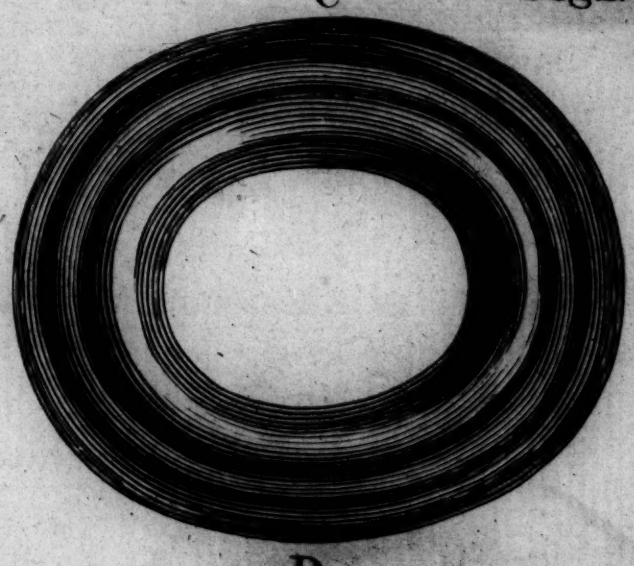
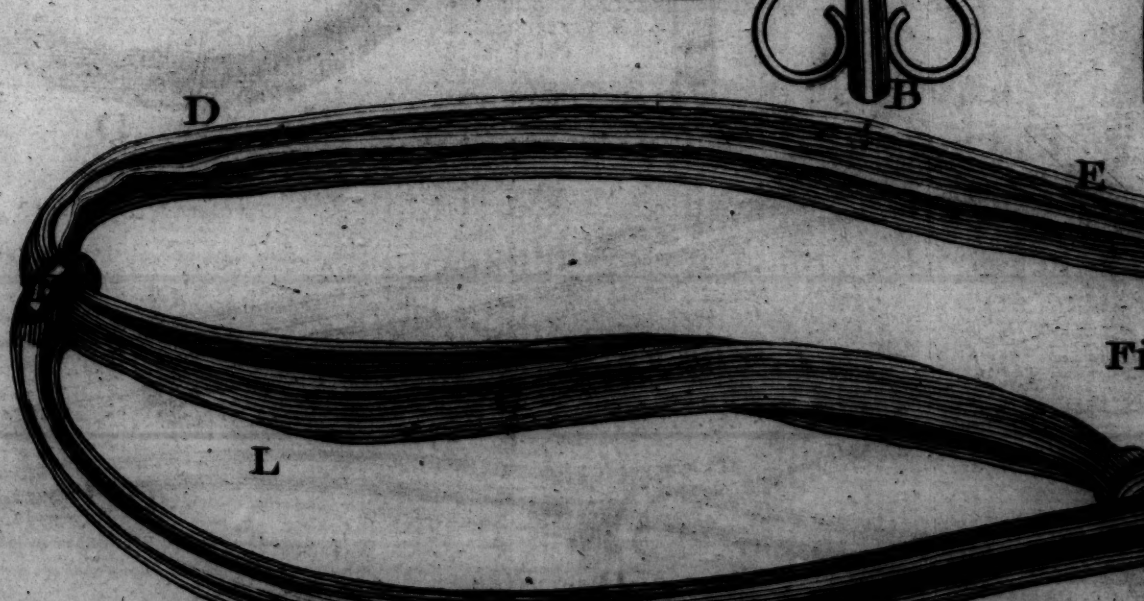
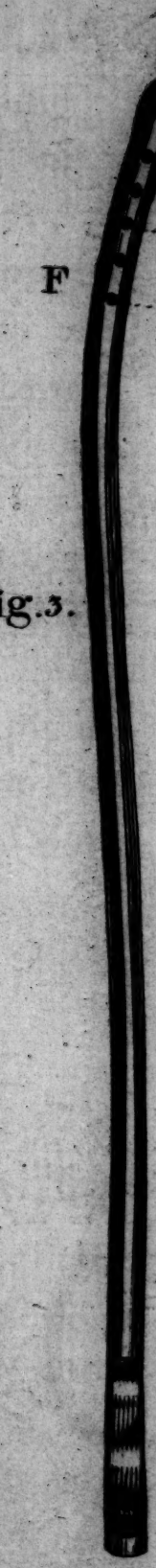



Fig.6.






ig.3.

Fig.4.

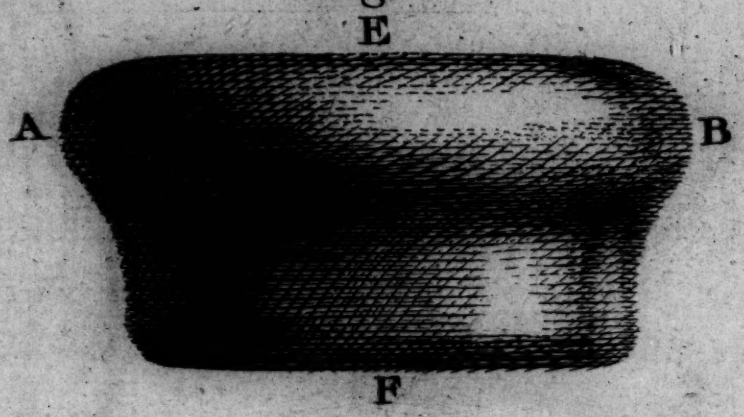
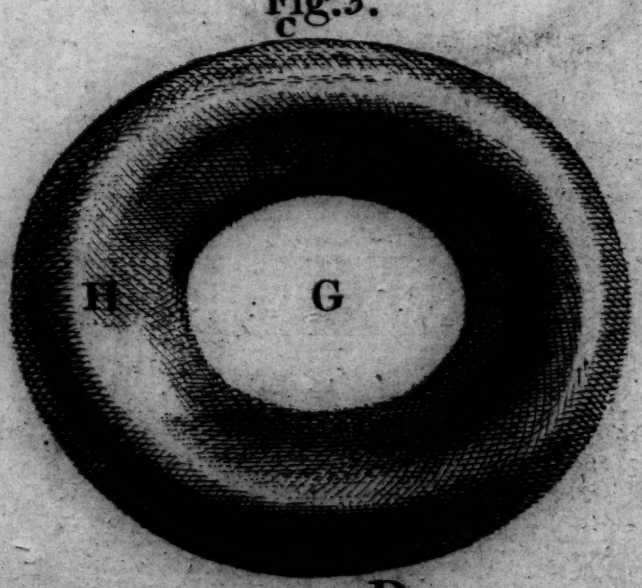



Fig.5.



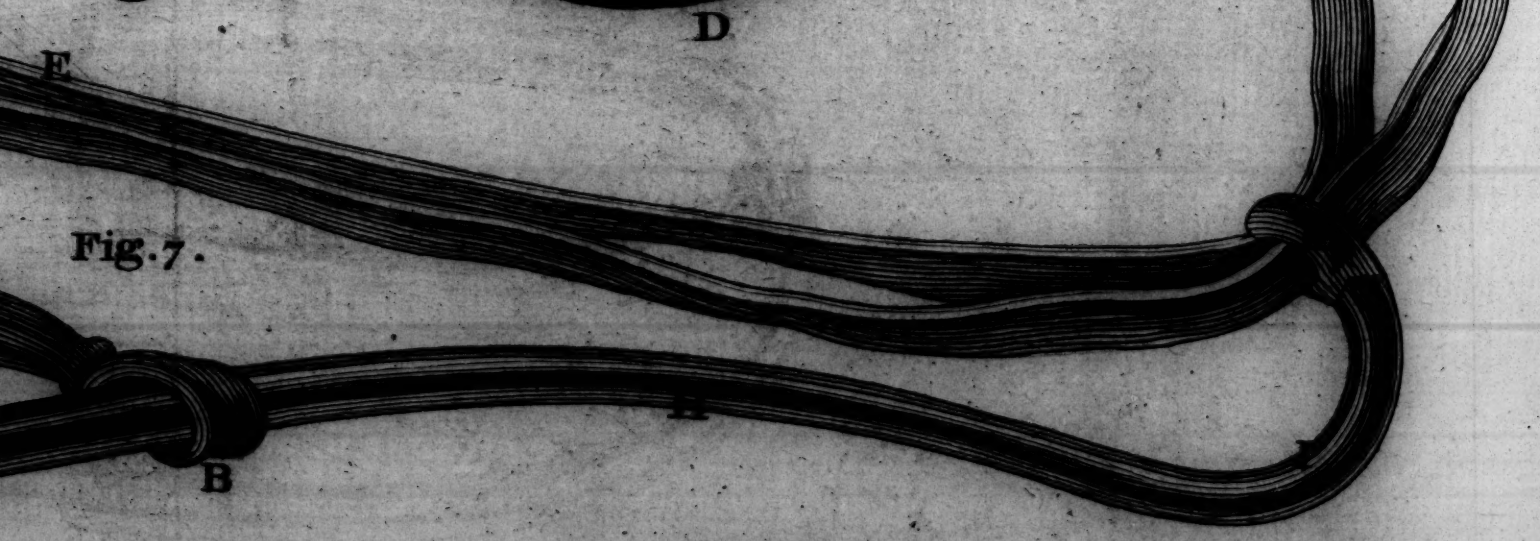




Fig.7.

time ſhe has remained well, and free from any return of the diſorder, though ſhe is married, has had a miſcarriage, and works very hard.

In 1767, I was deſired to ſee a gentlewoman, whoſe caſe I found to be a complete protruſion of the uterus. She was extremely well formed, and, till of late, had enjoyed a very good ſtate of health. She had been many years married, but never had been pregnant. The catamenia had ceaſed at forty, and this was the fifty-fifth year of her age. Her account was as follows: She had been much hurried in the management of houſhold affairs, having often exerted herſelf beyond her ſtrength. In 1765 ſhe was ſeiz'd (without any cauſe known to herſelf) with an uneaſineſs and weight about the loins and pelvis, attended with a bearing down. About a month afterwards the uterus came intirely without the labia pudendi, and had remained ſo ever ſince, except when ſhe went to bed, or made urine, at which times ſhe replaced it. Caſe II.

When I ſaw her on this occaſion, her health was much impaired. The vagina was excoriated in ſeveral places, and round the os uteri were ulcerations, from whence iſſued a fœtid ichor.

Having anointed the parts well with oil, I reduced the uterus, and placed a wooden peſſary (of the ſame form as that repreſented in Plate IX. but two ſizes leſs) in the vagina. This ſupported the uterus properly; but, the patient not finding it eaſy, a ſilver one was placed in its ſtead. The uſe of this was continued till January 1768, during which time it was taken out, cleaned, and replaced every fourteen days. In the beginning an injection (of the Mel Ægyptiacum diluted with water) was uſed, upon which the diſcharge leſſened and ſoon went off. Between this and the middle of September, the patient took out the peſſary once or twice a week, when going to bed, and replaced it in the morning. On the fifth of October, ſhe told me that ſhe had left it off about three weeks, and yet the uterus had only

come down in part, when ſhe was hurried or exerted herſelf much. I adviſed her to continue its uſe, notwithſtanding ſhe found herſelf ſo well*.

Caſe III. In 1764, a poor woman applied to me for help. The account, which ſhe gave me, was this. Seven years ago ſhe had a very difficult birth (the third child); upon going abroad ſhe had a ſenſation of a bearing down, which continued to the year 1760, when the uterus came intirely without the labia pudendi, and remained ſo every day afterwards, occaſioning much uneaſineſs, eſpecially at firſt, and when ſhe laboured at her uſual buſineſs, viz. waſhing linnen, &c. She informed me that ſhe had always put it up at night, and whilſt urine was diſcharged; that ſhe had had the catamenia always very regularly; and had miſcarried once in the third month ſince this diſorder began.

I found the tumor much larger than a man's fiſt. The os uteri appeared a little behind the centre of the inferior part: The vagina was of a pale whitiſh colour, a few wrinkles appearing, probably from the tumor's being now leſs, (as ſhe informed me) than it had lately been. It was replaced by a very gentle preſſure; but, upon ſtanding, it came directly down. I replaced it again, and then applied a peſſary made of cork covered with wax in form of that, Plate IX. and directed her how to remove it occaſionally; for circumſtances would not allow her to keep in bed, in order to have any other chance of a cure. Some time afterwards I was informed that the peſſary had kept the uterus in its place, and ſhe was eaſy.

From this time I heard no more of her till ſome time in the ſummer of 1767, when ſhe told me the peſſary was ſo rough, by the wax being ſcaled off, that ſhe could not uſe it. I now ſupplied her with

* Could I have prevailed on her to have lain in bed about a month, and not to have hurried herſelf afterwards, I am of opinion the cure would have been perfect before this time.

a wooden one, and in October 1768, was informed ſhe had been very eaſy till of late, when it occaſioned ſuch pain that ſhe could not uſe it. I had not an opportunity of ſeeing it, but conjecture this uneaſineſs proceeded from its ſurface having become rough.

Now, with reſpect to peſſaries, many kinds have been invented; ſome indeed very ingeniouſly; but here, as in all other inſtruments of ſurgery, ſuch as are eaſieſt to the patient, and moſt ſimple in their conſtruction, are certainly beſt. I recommend the one delineated in Plate IX. for this reaſon only, that I have found it always anſwer the purpoſe of keeping the uterus in its place, which is more than I can ſay of many others I have tried, though reckoned the beſt. It may be applied as follows:

The patient being placed on her back, the knees apart, and the vagina well anointed with ſome agreeable unguent, the peſſary dipt firſt in oil, muſt be inſinuated gently through the os vaginæ, one end foremoſt, with the upper edge E towards the pubis. I muſt obſerve Fig. IV. however, that in ſome caſes it is introduced and extracted more eaſily with either of the ſides C D obliquely towards the pubis. When it Fig. V. is paſſed into the vagina, (which ſhould be effected with ſome difficulty, but not ſo much as to lacerate the orifice) it muſt be turned the edge E upwards, and the ends A B towards the ilia. When placed thus, the os uteri may be felt within the foramen G. and the cervix will Fig. V. reſt upon the interior ſuperior part H H H H. The ſuperior exterior Fig. IV. part A B will fill the vacuity or hollow ſpace of the vagina, which ſurrounds the cervix uteri. Its lower edge F will reſt upon the perinæum and os vaginæ, and by the perforation G in the middle, any humidity that iſſues from the uterus will have liberty of exit through the os vaginæ. By this form and poſition of the peſſary the uterus will not only reſt eaſy upon it, but be kept ſufficiently high in the pelvis. The bladder will alſo be kept in its natural ſituation. Care however muſt be taken to keep the peſſary clean, and its ſurface

very

very ſmooth, elſe the deſired effect cannot be expected, even ſuppoſing its form, ſize, and poſition, exactly ſuited to the parts: Let it therefore be removed, and the ſordes taken off every two or three weeks at fartheſt. It is commonly extracted by inſinuating the end of a finger through the foramen, and bringing down one end; but if difficulty ariſes, the end F of the blunt crotchet Fig. 7 may be paſſed up ſideways between its anterior edge and the pubis, and then turned cautiouſly over the ſuperior part F; which being done, the edge is to be drawn down, the crotchet paſſed farther into the foramen, and one end made to preſent at the orifice, upon which it may be brought eaſily away without the leaſt injury to the patient.

Cure of an Inverſion.

§ V. In caſe of an inverſion, the curative indications, are, Firſt to reſtore the parts to their natural poſition; Secondly, to ſecure the patient as much as can be, from the evils which may ariſe, in conſequence of the accident; And Thirdly, to prevent a falling down of the uterus afterwards.

Some recommend a fomentation previous to the replacement; and this may be proper, when the uterus, having been long inverted, is ſwelled ſo much that it cannot be returned without applying ſuch force as would be dangerous: But the labia pudendi and os vaginæ are generally ſo open at this time, that ſuch difficulty can but very ſeldom, if ever occur; therefore, the placenta being detached, the reduction ſhould be made as quickly as poſſible.

In order to obtain this, let the upper part of the tumor be encompaſſed with both hands, and very gently ſlid in between the labia. As it paſſes upwards take a freſh hold below; that is, more towards the fundus uteri (which is ſtill the moſt dependent part of the tumor) and then move it up as before till the principal part of the body is got to follow. This being done, one hand, the nails being cut extremely ſhort, is to be formed into a cone, and placed againſt the fundus

fundus uteri to guide it through the pelvis, till it is entirely in its natural poſition above the brim.

If the reduction cannot be effected this way, with ſuch facility as could be wiſhed, the hand may be applied to the lower part of the tumor firſt, and the fundus uteri conducted through the orifices, and up through the pelvis, as adviſed before.

In doing this the operator muſt be extremely cautious and tender, leſt he bruiſe or injure the parts, and after the reduction, the hand may continue a minute or ſo, keeping the uterus in its natural form and ſituation, till a contraction begins upon which it muſt be withdrawn very ſlowly.

If the bladder is not emptied before the reduction, the catheter muſt ſoon be uſed, for, if it continues diſtended, or if the patient uſes any force or ſtraining in endeavouring to diſcharge the urine, there will be danger of a deſcenſion. To avoid this as well as forward the cure by allowing the patient to remain either in an horizontal poſition, or with the pelvis a little higher than the thorax, the catheter may be uſed occaſionally for ſeveral days. A continual diaphoreſis, and moderate diſcharge of lochia are very eſſential. Farinacious aliments are to be employed at firſt, and afterwards thoſe of the animal kind, as the caſe will admit of. If ſymptoms of an inflammation, or of a ſuppreſſion of the lochia enſue, bleeding, and the uſe of ſoft refrigerents, as directed in Chap. VII. are neceſſary: But, in the former of theſe, caution is required; for, as it appears, in caſes of an inverſion, there is generally ſuch an infuſion of blood, that the pulſe will but very ſeldom admit of bleeding. A fotus however, or inſtead of it, an emollient cataplaſm may be applied to the vulva, and hypogaſtric region. The alvine tube muſt be kept very free and eaſy, that neither forcings nor ſtrainings may be occaſioned by coſtiveneſs; and even though the cure goes favourably on, the patient ought to continue in bed above a month to give time enough for the

parts

parts to recover themſelves. And finally, upon her venturing to walk, ſhould there be any ſigns of a deſcenſion, a peſſary muſt be uſed as above directed.

What has been called a prolapſus vaginæ is relieved alſo by the uſe of the peſſary. As I am inclined to think that this diſorder depends on cauſes which are very different from thoſe treated of here, the reader is referred to the firſt caſe of the preceding chapter.

A peſſary being placed in the vagina has likewiſe been found beneficial in caſes of a prolapſus ani.

CHAP.

## CHAP. XI.

## OF A CANCER IN THE UTERUS.

WHEN a part, either fleſhy or glandular, preternaturally ſwells and forms a permanent indurated tumour, free from pain, it is called a ſchirrhus; ſuch a tumour, becoming painful, without any ſigns of ſuppuration, is called an occult cancer; and if it ulcerates, diſcharging a very fœtid and acrid ichor, the edges of the ſore being hard, unequal, or jagged, appearing of a bluiſh or purple caſt; the ſurrounding veſſels growing alſo turgid and appearing ſerpentine, it is deemed a confirmed cancer. Definition.

Scrophulous conſtitutions are the moſt liable to theſe diſeaſes; ſcorbutic habits ſeem next ſo. A venereal taint may add to it, eſpecially when its ſituation is in the uterus. Upon the final ceſſation of the catamenia it moſt commonly comes on, if earlier, the more eaſily cured. It is ſometimes preceded by an inflammation; an accumulation of peccant humours help always to conſtitute it. Grief may contribute to it, as alſo very violent agitations of the mind. Cauſes.

When it ſeizes the uterus, it is not ſo eaſily diſtinguiſhed as when it attacks an exterior part of the body; beſides, the phyſician is often not conſulted, till it is in a ſtate paſt remedy. Diagnoſtics.

Let women therefore be on their guard when ſuch ſymptoms as the following ariſe: a deviation of the menſtrua, not only as to their periods but quantities; a ſuppreſſion of them, not in conſequence of conception; a weight about the loins and pubis, attended with a bearing-down; great heat and pain in the uterus; as alſo a flux of acrimonious ſeroſities from it; a difficulty in excreting the urine and the fæces, &c.

Upon

Prognoſtics. Upon examining by the touch, ſhould the uterus be found but a little enlarged, and its form and ſituation natural, the caſe is often curable, though moſt of the above ſymptoms appear.

If it is as large as is uſual in the third month of pregnancy, very hard, unequal, and painful, diſcharging a very fœtid ichor, it will be more difficult of cure; and when together with the above ſymptoms, its bulk is ſo increaſed, that its fundus may be felt above the pubis, eſpecially if the patient is upwards of forty years of age, it is commonly incurable.

Cure. In the cure a very particular regard muſt be had to the patient's habit of body, as well as to the preſent ſymptoms of the diſeaſe.

Veneſection and the uſe of refrigerents come firſt in order; eſpecially if there be ſigns of an inflammation. In this caſe however, the pulſe is ſometimes rather ſmall and depreſſed; of which if the phyſician is not apprized, he may be deceived. The uterus is to be injected firſt with emollients, and then with detergents. But if it is much enlarged, very hard, and painful, ſome other remedies muſt now be uſed.

I ſhall not aſſert, that a confirmed cancer of the uterus can be cured; eſpecially if the patient is above forty. But I muſt own that I have known caſes cured in which the womb has been ſchirrhus, and extremely painful, accompanied with other ſymptoms ſo much like a cancer, as to have been taken for one.

To illuſtrate this, I ſhall inſert the two following caſes, allowing the reader to judge for himſelf.

Caſe I. Mrs. Weſt, (at the Ayte, in Kew Pariſh) in the time of her ſixth pregnancy, had a diſcharge like the fluor albus, which continued till ſhe was delivered. She had enjoyed a good ſtate of health before that time, without any ſuch complaint; and was now in the twenty-ninth year of her age. Her husband was healthy, and had no complaint; the child proved ſo likewiſe, and had not the leaſt

leaſt appearance of humour upon him. After this delivery, the diſcharge was more troubleſome, and continued ſo during all the time of her ſeventh pregnancy. The husband had ſtill no complaint, and the child alſo was very healthy, without any humour about him.

After the birth of this child, the diſcharge became a little fœtid, and ſo very copious, that her ſtrength was greatly reduced by it. She nevertheleſs had the catamenia regularly, and there were no ulcers either in the vagina, or about the labia pudendi.

In a few months ſhe had the advice of the late Dr. Smellie, who aſſured her, that it proceeded only from a weakneſs of the uterus. Some time after this ſhe ſent for an old and experienced ſurgeon, who brought a man-midwife with him, and after examination, they were both of opinion, that it was a weakneſs occaſioned by her childing faſt.

The diſcharge proving ſtill more troubleſome, attended with pain about the ſmall of the back, and region of the pelvis, ſhe applied to a perſon who profeſſed ſurgery, and was by him adviſed to be ſalivated. He called to his aſſiſtance a phyſician, who likewiſe aſſenting, ſhe underwent the operation by unction, at the perſon's houſe, in december, 1751. The ſalivation was kept up very copiouſly for above ſeven weeks, and her ſtrength was thereby ſo much reduced, that it was above ſix weeks more before ſhe could be removed to her own houſe, at only the diſtance of three-quarters of a mile.

In conſequence of the ſalivation the diſcharge ſtopped, and ſhe felt a burning pain about the upper part of the ſacrum, in the region of the pelvis, and in the womb. She had no difficulty then in diſcharging urine; but was extremely coſtive, and continued to be ſo. In the time of the ſalivation ſhe had the catamenia very freely, but not the leaſt appearance of them ever afterwards.

She ſoon became very uneaſy, and felt in herſelf, that the womb was larger than uſual, occaſioning a ſenſation of a bearing down on

the perinæum, by which, together with the violence of the pain, ſhe could neither ſit, nor walk upright.

About ſix weeks after ſhe had returned home, ſhe went to London and had the advice of four phyſicians, and four ſurgeons (belonging to one of the Hoſpitals) one of whom was a Man Midwife. They were all of opinion that the diſorder was cancerous. She was ordered the uſe of nitrous medicines, gentle purges, and an injection which was to be thrown up by the nurſe; but finding that ſhe had no relief, they adviſed her to return home.

The pain had now increaſed greatly, and raged with ſuch violence, that ſhe could hardly contain herſelf; having never any eaſe nor ſleep, either day or night, except when obtained by opium. About a month being thus elapſed, ſhe applied to two other phyſicians as eminent in midwifery, as any in London.

They were alſo of opinion that it was cancerous; however, they took her under cure, in order to give her all the aſſiſtance in their power. Glyſters, and gentle purgatives were ordered; an iſſue was made in each leg, but, not diſcharging properly, and being extremely painful, they were ſoon dried up. One of theſe phyſicians injected the uterus himſelf, with the greateſt tenderneſs; but the pain which ſhe felt after each time, being ſo extremely violent as to occaſion faintings and ſometimes convulſions, he was obliged to deſiſt, and ſhe returned home.

She next applied to the late Mr. Ward, who finding that he could do her no good, was ſo honourable as to tell her ſo: but rather too haſtily added, that ſhe had better go home to be knocked on the head by the ſurgeon who had ſalivated her!

After this ſhe had the advice of the phyſicians and ſurgeons of Guy's-Hoſpital; but her ſtay there was ſo very ſhort, that ſuch means as they recommended, could not have time to take effect.

A foreign gentleman, having firſt obtained a bond from the husband to pay him a hundred pounds if he cured her, took her next under his

his care; he attended her ſix weeks, during which time he gave her various medicines, and a large ſyringe with directions to inject herſelf; but finding that he gained no advantage of the diſeaſe, the caſe, inſtead of being alleviated, growing ſtill worſe, he reſigned the bond, and patient alſo.

Whilſt ſhe paſſed through this very tragick ſcene, which was really more horrid, than what is here deſcribed; ſhe was ſeen by ſeveral phyſicians and ſurgeons of great repute, beſides thoſe mentioned;—all inquired into the caſe;—but none diſcovered means which gave relief.

November the twenty-ſecond, 1752, I was deſired to ſee her; but when I enquired into the caſe, I was afraid to meddle with it. However, being much importuned, I undertook to give her what relief I could. Before I did any thing, I waited on one of the phyſicians under whoſe care ſhe had been, in order to be well informed of the diſorder, and of the means which had been tried. The gentleman told me, with the greateſt candour, not only the means which had been uſed, but that the caſe was judged to be cancerous. I confeſs, I was much diſcouraged; but to make good my promiſe, I waited on her again, and found her as follows: She was greatly emaciated; her pulſe was low and quick; ſhe ſaid ſhe felt a burning pain in the womb, and all round it, ſometimes as high as the ſmall of the back; the uterus ſeemed to be as large as it uſually is between the third and fourth month of geſtation; and felt hard like a board. There was a little diſcharge which ſmelled fœtid, and ſeemed to proceed from the cavity of the uterus. There was alſo a little preternatural riſing, or prominency on one ſide of the cervix uteri, at a little diſtance from the orifice. The pain was ſo extreme, that for many months ſhe had no eaſe, and never ſlept except in ſhort ſlumbers, when intirely worn down by the continual agony. I began the cure as follows:

I. ℞ Salis Nitri purificati grana duodecim,
Pulveris e Chel. Cancrorum,
Spermatis Ceti,
Singulorum ſcrupulum unum;
Miſce, fiat pulvis ſexta quaque hora ſumendus
in hauſtulo aquæ hordeatæ.

II. ℞ Electuarii lenitivi ſeſqui unciam,
Pulveris jalapii drachmas duas,
Syrupi roſarum ſolutivi,
quantum ſufficit;
Miſce, fiat electuarium, cujus capiat quantitatem nucis moſchatæ, nocte maneque, vel pro re nata.

III. ℞ Foliorum Malvæ,
——— Artemiſiæ,
Singulorum ſemiunciam,
Hordeatæ perlatæ uncias duas;
coque in aquæ fontis quantitate
Sufficiente, ad uncias ſex; colaturæ adde
Adipis anſerini purificati uncias tres;
Miſceantur, et fiat injectio pro utero.

One half of this injection was uſed in the morning, and the other in the evening, the adeps being added at the time of uſing. Sometimes the ſyringe was filled with the adeps alone and injected laſt. It was applied to the cavity of the uterus by a ſyringe-like that delineated in Plate X. and in ſuch a manner as ſhall be deſcribed in the next chapter.

At firſt I could not paſs the canula above a quarter of an inch within the os uteri, but in proceſs of time, the paſſage through the cervix became more open, ſo that in a month's time about an inch and

an

an half went readily within the orifice, without giving pain or even uneaſineſs.

This operation was continued about ſeven weeks. In fourteen days after it was begun, the catamenia, which ſhe had not ſeen the leaſt ſigns of for above eleven months, appeared, and continued red near three days, though very little in quantity. I ſtill perſiſted in uſing the injection, and continued it till the next return, which happened about the twenty-eighth day following; then I deſiſted in order to know what nature would do by herſelf, and finding now that the catamenia were of a pretty good colour and quantity, that the uterus was leſſened, and not quite ſo hard, nor painful, as when I began, I only injected about a week longer, and then left off.

During the ſeven weeks of this operation, eſpecially at firſt, ſhe felt ſuch a violent pain through the whole region of the pelvis, as to make me ſuſpect, the ſeat of this diſorder to be ſometimes in one part, and at other times in another. The uterus preſſed upon the neck of the bladder, and occaſioned at times an uneaſineſs and difficulty in diſcharging the urine; and, being examined by way of the rectum, it felt ſo very bulky and preſſed ſo much againſt that inteſtine, as to make me conjecture that this was one reaſon of her being ſo extremely coſtive.

In ſhort the violence of the pain made her complaints ſo affecting, ſhe often making uſe of this expreſſion, viz. *that ſhe had a fire within her*, that I dreaded ſeeing her: But conſidering that the ſymptoms were not aggravated by the operation, that it rather alleviated them, that ſhe was impatient for my time of attendance, and that the cavity of the uterus felt more open, I was thereby encouraged to proceed. The ſoft and cooling medicines were continued; an opiate was given when the pain grew outragious; the body was kept open by the electuary; and when that failed, other aperitives, and emollient glyſters

alſo

alſo were given. And moreover ſome of the uterine injection was ſometimes thrown into the rectum.

She now could get out of bed and ſit up a little, which was more than ſhe had been able to do for ſeveral months before. She ſometimes complained of the pain's being violent about the region of the kidneys, which made me try the following enema:

IV. ℞ Terabinthinæ communis ſemiunciam,
Spermatis Ceti drachmas duas;
Solve ſimul in vitello unius ovi,
deinde adde,
Decocti communis pro clyſteri uncias ſex: Miſce.

As ſhe thought that this gave her ſome relief, it was continued once or twice a day, till having no effect, thirty or forty drops of the tinctura thebaica were then added, by which ſhe at firſt found conſiderable eaſe; but, this loſing effect alſo, the tincture was increaſed to one drachm. Finding now that opium given in this way, afforded more relief than when it was taken by the mouth, and not being certain but the continuance of the terebinthina might cauſe too much heat, I therefore directed the following:

V. ℞ Mellis unciam dimidiam,
Spermatis Ceti ſoluti drachmas duas,
Tincturæ thebaicæ drachmam unam,
Aquæ hordeatæ uncias ſex,
Miſce, fiat enema pro re nata injiciendum.

This enema, the tinctura thebaica being at laſt increaſed to two drachms, was given at times to procure reſpites of eaſe; eſpecially when

when ſhe was exhauſted by the pain, till the latter end of February, 1753, at which time being well convinced ſhe was better in every reſpect, I adviſed her to leave it intirely off.

She tried it, but having ſtill a ſenſation of the burning pain, though not near to that degree as it had been; having enjoyed ſome refreſhing ſlumbers by means of the opiate, ſhe importuned me hard for the liberty to have ſome of it by her. I therefore allowed her to take it in drops when ſhe found the neceſſity urgent. With this ſhe went on till May, when, at laſt, taking it ſo freely as to an hundred and fifty, and ſometimes two hundred drops in a day and night, whereby ſhe became continually intoxicated, I prohibited its uſe totally, from an apprehenſion, that it muſt hinder, or diſturb the efforts which nature ſeemed to be making towards a gradual recovery; for ſhe was now manifeſtly better in health. She could walk and ſtand more upright, though not quite erect. The catamenia had continued regular, as to time, but were ſtill very ſmall in quantity; and but of ſhort duration, which, as I imagined, was, in ſome meaſure, owing to the uſe of the opium.

The uterus itſelf felt leſſened, and not ſo hard, and there was no diſcharge.

The medicines, beſides thoſe mentioned, which were taken during this time, were thoſe of the nitrous and ſofteſt kinds; the body was kept open by gentle aperients, as the above electuary, manna, tamarinds, purging ſalts, &c. oleum amygdalarum dulcium being ſometimes added; and when the coſtiveneſs rendered theſe and an enema alſo ineffectual, aloetic pills were given; and when theſe failed likewiſe, which ſometimes happened, an equal quantity of argent. viv. being added (ſ. a.) they generally ſucceeded.

One thing I muſt here obſerve, viz. that I cannot find by my notes that ſhe was ever bled during all this time; if ſhe was not, experience makes me think now that this was an omiſſion.

Having

Having debarred her now from the uſe of opium, and ſhe ſtill feeling pain, which, although not violent, was yet hard to bear always, and being adviſed by ſome of her acquaintance to go to St. George's Hoſpital, ſhe accordingly went, was admitted, and ſtayed there about three months.

In a day or two, after ſhe was taken in, ſhe was examined by one of the ſurgeons of the hoſpital, who had knowledge in midwifery, and who gave it as his opinion, that he found neither diſeaſe, nor any thing unuſual in reſpect to the uterus.

She was now bled once or twice a week, in ſmall quantities for ſome time, and then not ſo often. The medicines which ſhe took, were nitre, purging ſalts, manna, oleum amygdalarum dulcium, opium, and ſometimes pills with the fœtid gums.

Notwithſtanding the advantage of this very rational plan, conducted by the judgment of experienced and very ſkillful phyſicians, ſhe returned home with nearly the ſame degree of pain; I thought that it appeared rather leſſened, but ſhe would not acknowledge it. She continued an out patient for ſome time; but, finding the pain ſtill continue, on the 26th of February, 1754, I was deſired to attend her again.

I now found the uterus moſtly, if not intirely, in the ſame ſtate, as when ſhe went to the Hoſpital; though the catamenia had ſtill returned at the regular periods. About ſix ounces of blood, which was very ſizy, were now taken from the arm; and ſhe was deſired to take an aperient electuary, like that which was firſt preſcribed. On the 24th of March, I ordered her the following pills:

VI. ℞. Æthiopis Antimonialis ( a Pharmacopœia Doctoris James ) drachmas duas et dimidiam,
Pulveris Rhei drachmam dimidiam,
Muſcelaginis e gummi Arabico
quantum ſufficit;
Miſce, fiant pilulæ numero triginti, quarum capiat duo omni nocte.

Theſe pills were continued to the beginning of July, during which time the body was kept open; and about once a week ſhe took a purging draught, or a doſe of cathartic pills. She was alſo bled twice more, and the uterus was injected again during the ſpace of about fourteen days.

After this ſhe felt a violent itching within the pelvis, vagina, and labia pudendi. This pruritus being extremely troubleſome, I deſired her to waſh the labia, and ſyringe the vagina once or twice a day, with the following lotion:

VII. ℞. Mercurii corroſivi Sublimati
drachmam dimidiam,
Aquæ Calcis libram unam,
Mellis Roſarum unciam unam; miſce.

As this gave her ſome relief ſhe continued the uſe of it till Auguſt. In September a large iſſue was made by a cauſtic above the knee, which diſcharged plentifully. I alſo ordered the following electuary and water:

VIII. ℞. Spongii uſtii unciam unam,
Salis Nitri drachmas duas
Conſervæ Roſarum rubrarum
unciam ſemis,
Syrupi Simplicis quantum ſufficit;
Miſceantur, et fiat electuarium de quo capiat quantitatem nucis moſchatæ bis in die, ſuperbibendo libram dimidiam aquæ marinæ.

This electuary and water were continued to the middle of November. She was now manifeſtly better, both in reſpect to health, and to the abatement of the pain.

In the latter end of January, 1755, and beginning of February, ſhe was troubled with a difficulty in making urine, for which ſhe was blooded, and took ſome oily aperients. The cauſe of this complaint became ſoon manifeſt, by a very natural enlargement of the uterus; for the huſband (with whom I had often joaked) had played his part ſo well, that on the ſixth day of June following, I delivered her of a ſon, who is now alive, and ſince that time I have delivered her of five more children.

With reſpect to the uterus, I found nothing unuſual; the placenta alſo was natural, and came away eaſily. The lochia were rather ſmall in quantity, yet ſhe recovered very well, excepting that ſhe felt a little ſenſation of a heat in the region of the pelvis, that continued till the birth of the next child; ſince which time ſhe has felt nothing of it, and continues ſtill in perfect health.

Caſe II. On the 30th of December, 1760, I was called to Mrs. Walker, at the Queen's-Head, Brook-Green, Hammerſmith, who was then aged 27. She had been married ſix years, and had once conceived, but ſoon miſcarried. Before marriage ſhe had been very healthy and regular, but ſince that time, her catamenia returned ſometimes every fortnight very copiouſly attended with great pain, which lately had increaſed much.

About a month before I ſaw her, ſhe was ſeiz'd with a violent burning pain in the pelvis, aſcending at times as high as the ſmall of the back; but more commonly running acroſs the hypogaſtric region, and then occaſioning a violent forcing and bearing down of the womb.

She was alſo affected with a frequent urgency to urine, attended with pain; this laſt complaint began about a week before the former.

The

The uterus was enlarged, and there iſſued from it a large diſcharge of a brown coloured fœtid humour, which, at this time, it being the catamenial period, was tinged red; but there were not any ulcers, either about the labia, or within the vagina.

She had no appetite, but was feveriſh, thirſty, and had neither eaſe, nor ſleep, day or night; except when obtained by opium. The caſe being examined, I preſcribed the following draught:

IX. ℞ Mixturæ oleoſæ cum gummi uncias duas;
Fiat hauſtus ſexta quaque hora ſumendus.

This draught was continued to the third of January, 1761, during which time the rectum was now and then exonerated, and fomented with an emollient glyſter.

On the fourth ſome blood, which was ſizy, was taken from the arm; the draught was continued, half a ſcruple of nitre being added, and the following injection uſed.

X. ℞ Pulveris gummi arabici ſemiunciam,
Solve in aquæ roſarum drachmas ſex,
cui ſenſim adde
Olei amygdalarum dulcium uncias duas;
Aquæ roſarum uncias ſex; miſce,

The uterus was injected by three ounces of this mixture, an ounce of adeps anſerinus being added, firſt made agreeably warm: And in the evening ſhe took an anodyne. On the ſixth the following draught was taken:

XI. ℞ Infuſionis ſennæ ſeſquunciam,
Mannæ optimæ drachmas tres,
Tartari ſolubilis ſeſquidrachmam;
colaturæ adde
Tincturæ ſennæ ſemi unciam;
Miſce. fiat hauſtus.

The

The uterus was injected once a day, and the oily draught continued to the thirteenth, when the nitre was increaſed to a ſcruple. She was now bled to ſix ounces, and adviſed to repeat the purge on the morning following. At this time the fever was intirely gone; the uterine diſcharge was large; but not ſo fœtid, and there were conſiderable reſpites of eaſe.

On the fourteenth, three drachms of the balſam capaivæ were added to eight ounces of the oily mixture; and the adeps laid aſide. The uſe of this injection and that of the oily draught was continued to the nineteenth, at which time ſhe was bled again to about ſeven ounces, which were ſtill ſizy.—The draught and injection were continued to the twenty-firſt, when the uterine diſcharge was conſiderably leſſened, had loſt its fœtidneſs; and, in every reſpect, the patient was manifeſtly better.

On the twenty-third ſhe was ſeiz'd with a violent cough, attended with a fever. Theſe incidents were attributed (by an experienced and very ſkilful apothecary, as well as by myſelf) to a cold which ſhe had caught by having the room waſhed.

Veneſection was repeated to ſix ounces (blood ſtill ſizy) and the following draught directed.

XII. ℞ Spermatis Ceti ſoluti drachmam dimidiam,
Succi limonum drachmas tres,
Salis abſinthii ſcrupulum unum,
Aquæ alexiteriæ ſimplicis unciam unam,
—— ——— ſpirituoſæ,
Syrupi pectoralis ſingulorum drachmas duas;
Miſce, fiat hauſtus ſexta quaque hora ſumendus,
Tincturæ thebaicæ gut. xvi. addendo hora ſomni.

On the twenty-ſixth the cough being ſtill very troubleſome we were in ſome doubt whether it did not partly proceed from the leſſening of

of the uterine diſcharge, for this was now very ſmall. An iſſue was therefore made below the knee. But her habit of body was ſo very bad, as to threaten a mortification, ſo that it was obliged to be healed in about a week. The draught was continued, and her body kept open by aperients, till the ſecond, when ſhe was ſeiz'd with a pleuritic pain, a quick pulſe, and conſiderable increaſe of the cough.

Veneſection was again repeated and the following remedies preſcribed :

Applicetur veſicatorium affecto lateri quamprimum.

XIII. ℞ Spermatis Ceti ſoluti drachmas duas,
Salis nitri ſcrupulos quatuor,
Aquæ puræ uncias ſex et dimidiam,
—— nucis moſchatæ,
Syrupi pectoralis,
Singulorum drachmas ſex ;
Miſce, fiat mixtura cujus capiat cochlearia quatuor ſexta quaque hora.

XIV. ℞ Emulſionis communis libras duas ;
cujus bibat calide ℔ſſ. horis intermediis.

As the pleuritic pain leſſened, an eruption of ſmall and reddiſh pimples like miliary puſtules, came out over all the body.

The mixture and emulſion were continued to the tenth of February, the cough abated ; the eruption vaniſhed ; and the fever went off intirely. The uterine diſcharge as well as the pain being now gone, I left off the injection, and adviſed the uſe of the following remedies :

XV. ℞

XV. ℞ Radicis ſarſaparillæ inciſæ uncias tres,
coque in aquæ puræ libris quatuor ad
dimidium ; colaturæ adde
Sequentis ſolutionis ſeſcunciam,
Syrupi ex althæa unciam unam ;
Miſce. Capiat calide lbſs. omni nocte maneque.

The ſolution was made thus:

XVI. ℞ Mercurii corroſivi ſublimati grana octo,
Spiritus vini rectificati libram dimidiam,
Miſce.

Theſe alteratives were continued to the eighteenth, when a ſweat ſupervening, which ſeemed to be colliquative, the following mixture was directed:

XVII. ℞ Corticis peruviani contuſi drachmas ſex,
Balſami tolutani drachmam unam,
coque in aquæ fontanæ unciis duodecim,
ad uncias ſeptem ; colaturæ adde
Tincturæ corticis peruviani ſimplicis,
Syrupi albi ſingulorum unciam dimidiam,
Miſce. Capiat uncias duas ter in die.

This mixture, a few drops of the elixir vitrioli mynſichti being added to each doſe, was continued to the ninth of March, at which time ſhe was free from the fever and uterine diſorder; but was very weak, and her legs ſwelled.

I now adviſed a nutritive diet, conſiſting principally of the animal kind; and that ſhe ſhould ride as often as ſhe could.

Theſe particulars being obſerved near two months, her health was perfectly reſtored; and ſince that time ſhe has had no return of the complaints, but continues in very good health.

CHAP.

Plate X.

B

## CHAP. XII.

## OF INJECTING THE UTERUS.

TO perform this operation, let the patient lie on her left ſide, acroſs the bed, with her knees forwards towards the abdomen, as in the poſition for delivery.

A ſufficiency of cloaths ſhould be properly placed to keep her dry, and ſhe muſt be decently covered.

The injection ſhould be warmed to a degree of heat nearly equal to that of the body, and the woman, who is to aſſiſt, muſt be inſtructed how to fill the ſyringe, and give it as required.

When thus prepared, the operator muſt kneel or ſit at the ſide of the bed, and paſs the fore finger A, of his left hand B, firſt well anointed with oil or ſome agreeable unguent, along the vagina C, C, C, till its point arrives at the poſterior ſide of the os uteri D; then the ſyringe E, being filled with the injection, muſt be taken from the nurſe by his right hand, and the canula F paſſed along his finger A to its point G, from whence it muſt be ſlid into the os uteri, and ſo on till about an inch of it is within the orifice, taking care at the ſame time not to preſs its point H againſt the inner ſurface of the uterus, ſo as to occaſion pain or hurt. The barrel E of the ſyringe muſt now be graſp'd with the three fingers I, I, I, of his left hand, the piſton K laid hold of by his right hand, and then the injection thrown with a moderate degree of force, into the cavity of the uterus. Plate X.

This being done, whilſt the finger remains in the vagina as a director, the ſyringe muſt be withdrawn, loaded, introduced, and diſcharged again in the ſame manner for three or four times, or as often as neceſſary.

If

If the os uteri is very high in the pelvis, or if the operator's finger is but ſhort, the operation will be eaſieſt performed by paſſing the fore finger of the right hand for the director; and, having conducted the canula with his left hand, from the point of the right fore finger into the uterus, he may either diſcharge the injection in that poſition, or turn the point H towards the pubis, as repreſented in the figure. But, if he does not turn it thus, he muſt obſerve to keep the hand, and the barrel of the ſyringe back towards the perinæum L; and when the point of the canula is ſufficiently within the uterus, he may bring the os tincæ a little forwards towards the pubis; by which poſition the injection will be thrown directly along the cavity M.

The operation being finiſhed, a warm cloth muſt be immediately applied, the patient remaining afterwards about half an hour in a horizontal poſition.

The uterus may be injected in the manner I have deſcribed, in leſs time than five minutes, with great decency, much eaſe, and no danger; the truth of which I can aver from long experience.

THE

# THE APPENDIX.

## LETTER I.

*From* DR. JOHN REDMAN, PHYSICIAN, *in Philadelphia.*

SIR,

YOU will no doubt be ſurpriſed to find yourſelf addreſſed by a perſon ſo wholly unknown to you. But your merit, in conſequence of the pains you have taken for the good of mankind, by your truly valuable Treatiſe of Midwifery, ſo well calculated to improve the obſtetric art, entitles you to the regard and acknowledgements of all who profeſs and practice it. I did not hear of your book till laſt year, when I met with Mr. White's Eſſay on the Puerperal Fever, which, being a ſubject I had long wiſhed to ſee treated by thoſe who had opportunities of attending many caſes of that ſort, and examining ſome of them after death, I read it with great attention and pleaſure, and obſerved therein, among others, your Treatiſe of Midwifery mentioned with approbation: And as I was ever anxious to ſee any thing new on that ſubject, I immediately ſent for it to my correſpondent, Mr. Bevan, Druggiſt, in London, not doubting to enjoy great ſatisfaction therefrom. Upon receiving it lately from him, I was not diſappointed, but can ſay I have received great entertainment, and no ſmall im-

provement thereby; and therefore take this opportunity to thank you for myſelf, and acknowledge how much I think the world indebted to you, for ſo important an addition to medical ſcience in general, and the obſtetric art in particular.

I find by your account, I had attended Dr. Smellie about a year before you, and ſhould have been happy if we had met there, and been acquainted at that time. I then thought his improvements ſuch as would not be ſoon enlarged by any other; and indeed I think the world much indebted to him, both for his genius and humanity in that way, and eſpecially for his great induſtry and very honeſt endeavours, by every poſſible method he could, to enlarge and perfect the art. But upon entering into practice, I ſoon found there were ſome defects in his method, and eſpecially (as you mention) great difficulty in applying his forceps, ſo as to anſwer the purpoſe, without waiting long, till the head was advanced very low, before I could fix them, ſo as to accompliſh the delivery; and more than once I was obliged to do it with only one blade on one ſide of the head, depending on the aſſiſtance of my left hand on the other ſide, and that of the pains to compleat the delivery. But the length of time, and great preſſure of the head in the paſſage, and by the forceps, when I uſed both blades, was often attended with ill conſequences to the mother or child; ſo that I was once induced, tho' with great labour, to turn the child, rather than wait too long, and run the riſque of the uſe of the forceps; and that in a caſe where I would have uſed them, had I not been ſo much difficulted before to fix them properly. For theſe reaſons, I have long been of opinion, that a further improvement was wanting, but was not lucky enough to hit upon it myſelf; I was therefore highly pleaſed when I received your book, and found you had made an improvement in ſo important an article as the forceps; and cannot be eaſy, till I become poſſeſſed of a ſet of them.

them. I ſhould have ordered my correſpondent immediately to have ſent me them, but I obſerve in your introduction, and Chap. VII. you complain, that ſome have been made and vended, which were not quite agreeable to your pattern, and adviſe ſtudents not to uſe any, but ſuch as are made exactly according thereto. I was therefore at ſome loſs how I ſhould certainly obtain ſuch; for, ſhould I ſend to my correſpondent, as he is not particularly verſed in thoſe matters, he muſt depend on the maker of whom he purchaſes them, who being ignorant what the particular deficiency is you complain of, might ſend me the beſt he could make, and yet be faulty: And as I am at ſo great a diſtance, I might be deceived, and not able to remedy myſelf, for a long time at leaſt. I can therefore ſee no way ſo likely to prevent a miſtake of ſo great importance, as by applying to yourſelf, and requeſting the favour of you to order a ſet of forceps, made in the beſt and moſt exact manner, according to your direction, by a mechanic who has been uſed to do it, and whom you can truſt. I confeſs I am almoſt aſhamed to do it, but humbly hope you'll excuſe the freedom I uſe, and trouble it will give you; to which I am not a little induced, by the ſpirit of humanity and benevolence, conſpicuous in many parts of your book, and ſo fully evidenced, not only by the general deſign, but by the great labour, pains, and time it muſt have coſt you, as well as patience in compoſing and proſecuting ſo arduous and important a taſk: which, as it will make you uſeful to generations yet unborn, I doubt not will make your memory dear to poſterity, for ages yet to come. For theſe reaſons, I flatter myſelf, you will rather be pleaſed than offended at my requeſting you to order them, with one of your perferators, embryulcus, and crotchet, carefully packed up in a box, to be ſent to Mr. Timothy Bevan's, Druggiſt, in White-Hart-Court, London, whom I have ordered to pay for them, and ſend them to me by the firſt good opportunity.

opportunity. I already have promiſed to preſent your treatiſe to our hoſpital, which I have had the honour to attend as one of the Phyſicians, for fifteen years, ſince its beginning, and greatly recommended it to the pupils of that inſtitution, who are not a few, and anually diſperſing all over the continent; whereby your labours will become more extenſively uſeful than heretofore you might imagine, which, I doubt not, will be very agreeable to that humane and generous diſpoſition you diſplay throughout the whole book. It will be alſo deſirable to know, who you think can be beſt truſted to make the forceps, &c. if any others ſhould deſire to ſend for them. If any thing new has occurred to you, or any other publications that are valuable have appeared, I ſhall eſteem it a great favour to have ſuch intelligence from you, as may enable me to come to the knowledge and ſight of them.

And now, worthy Sir, that I may no longer treſpaſs upon your time, which, I doubt not, is much and better employed, permit me, with due reſpect and juſt eſteem, once more to crave your pardon, and at the ſame time your compliance with my requeſt; which, as it will make me more uſeful, and probably more ſucceſsful, in the important and tender office I am ſometimes called to perform, I hope will be a real gratification to your benevolent mind; and will alſo greatly oblige, your unknown,

*But very affectionate humble ſervant,*

JOHN REDMAN.

*Philadelphia, in Penſylvania,*
*North America,*
*September* 20, 1774.

## LETTER II.

*February* 20, 1775,

*From the* AUTHOR, *to* DR. JOHN REDMAN.

SIR,

YOUR very polite and ſenſible letter, dated *September* 20, 1774, reached me a few weeks ago, and ſhould have been anſwered before now, if the inſtruments could have been compleated. It certainly muſt appear ſtrange to you, that any difficulty ſhould ariſe in effecting ſo very trifling a piece of mechaniſm, but true it is, even ſince my publication, that Gentlemen have applied to me from many very different places on this head; and though I have given workmen my own inſtruments to make the others by, yet never could get them done to my mind; I have now however got a ſet finiſhed, which I beg your acceptance of, as patterns to have others made by, without having the trouble to ſend to England for them: I do not mean, by ſaying this, that you ſhould be ſcrupulous about applying to me for any aſſiſtance you may wiſh for; no, it will always give me pleaſure to execute your commands, in every thing that lies in my power. Nay, you are entitled to my beſt ſervices, not only for the very great honour which you have done me in your letter, but for your generous and humane endeavours to aſſiſt mankind, and to diffuſe my work through the very extenſive country of America, for which I return you my moſt grateful thanks. It is true, I believe that moſt men are fond of applauſe, nor can I pretend to be void of ambition; and, though conſcious of deſerving but very little praiſe, yet finding my endeavours for the good of others to be approved of by gentlemen of learning and ex-

perience, eſpecially, Sir, by you, whoſe letter diſplays a higher degree of goodneſs of heart, as well as judgment, in ſuch parts of the obſtetric art as I will venture to ſay, very few Practitioners of that branch of phyſic have any right to claim, I cannot therefore but be, as indeed I am, very happy.

You deſire to know if any thing new has occurred to me, or if any publications that are valuable have appeared.—I have for ſeveral years endeavoured, as much as I could, to throw my practice of midwifery into the hands of a nephew, and to apply myſelf to that of phyſic, and ſome branches of chemiſtry; ſo that but few opportunities have occurred to me lately, for making diſcoveries in the obſtetric line.

Could I have time to give new editions of my Syſtem of Midwifery, and of a little work which I publiſhed before it, (called "Friendly Cautions to the Heads of Families," one of which, I herewith ſend, and beg your acceptance of) I would correct ſome errors of the preſs, and make a few alterations; though I muſt own to you, that ſo far as I have been able to judge, either from my own practice, or that of others, the general ſcope and principal parts of them both do ſtill bear the teſt of trial.

I cannot help thinking that it muſt be needleſs, if not impertinent in me to tell one of your experience, that ſince my publication I have found the uſe of unction a ſlow but ſafe and certain way of curing the lues venerea. However, as I perceive your candour, I am encouraged to tell you the method I uſe; it is this, I adviſe ℈i. of unguent (made as follows, ℞. Axungiæ porcinæ, argenti vivi an. ʒiv. argentum vivum teratur cum ʒii. axungiæ donec apparere deſinat, deinde paulatim adde reſiduum, et diligenter miſce) to be well rubbed into the ſkin, on the inſide of the patient's thighs or legs, every night for a week; then increaſing to ʒß during another week, and ſo on to ℈ii. or more, till the cure is compleated, obſerving all the time to leave off a day, or longer, whenever the mouth grows hot,

hot, or the gums ſo much affected as to indicate a ſpitting, which I think ſhould always be avoided*.—I find alſo, that though emetics and cathartics ſhould be always uſed with caution in time of pregnancy, yet when neceſſary, may be ſafely given in larger doſes than thoſe which I ventured to adviſe, when I publiſhed.—And in caſes that have required the uſe of forceps, having introduced the blades, as directed, I have found the clams twiſt ſo much (ariſing as I apprehend from ſome aukward poſition of the child's head, neither ſo eaſy to myſelf, nor to the patient in the application as I wiſhed) that I have been troubled to bring them ſo ſquare as to lock; yet by ſhifting them gently a little round from ſide to ſide, I have always overcome the difficulty, and finiſhed the delivery as directed: except when the child has been long dead, and its head puſhed out ſo greatly in length as not to be encompaſſed by the clams, in which caſes, as ſoon as diſcovered, rather than fatigue or hazard the patient by uncertain endeavours, I have delivered her by the embryulcus, which inſtrument, uſed as I have directed, I muſt ſtill declare to be more ſafe and efficacious than any I know of.—Beſides the above few hints, I herewith ſend you a caſe from my nephew, Mr. Corſon, which I think is worthy of ſome notice, as it indicates an advantage that he gained by deſiſting, and waiting awhile, when he found the os uteri, too rigid to be ſufficiently dilated with ſafety by the hand; and alſo helps to prove, that when a flooding has been occaſioned by the placenta's having adhered to the cervix and os uteri, as was the caſe here to my own knowledge, ſhould the natural efforts be ſo effectual as to bring the head of the child into the pelvis, the bleeding orifices will become ſo much compreſſed, that the hemorrhage will ceaſe†.

* This practice coincides ſo much with that of Mr. Hunter's, in his Treatiſe on the Venereal Diſeaſe, lately publiſhed, that I muſt have had my hint from him, prior to the time this letter was wrote.

† I do not find that I have kept a copy of the particulars of this Caſe.

I have a notion that you muſt have ſeen every valuable work which has been publiſhed here theſe ſeveral years paſt, excepting that of Dr. Hunter's, which excellent work, I think, muſt give you great ſatisfaction. You mention Mr. White, and I ſuppoſe you have ſeen Dr. Hulme's work, publiſhed before on the ſame ſubject. I have not the honour of being perſonally known to either of the two laſt mentioned gentlemen, but, muſt do them the juſtice to ſay, that I think the world is much obliged to them, (eſpecially to the latter) for throwing new light upon the nature and cure of the puerperal fever. I do aſſure you, that when I was about publiſhing my book, I applied to ſeveral of the moſt eminent Phyſicians in London, requeſting their opinions concerning this fever, but every one declined it; ſo that I was under the neceſſity of giving the public only ſuch ideas as I could form from my own experience, and the teſtimony of ſome judicious ſurgeons, eſpecially Meſſ. Hunter and Hewſon, who had opened the bodies of ſeveral women, who had died of this fever. I am happy in finding ſeveral parts in the books of both Dr. Hulme and Mr. White, correſpond with the hints which I had given, and ſerving to explain this matter better than I was able, or even durſt venture to aſſert at that time from my own experience.—I muſt now, Sir, conclude, by telling you, that I ſhall eſteem it an honour done me, ſhould you continue a correſpondence with me; and by aſſuring you that I remain, with juſt regard and affection,

*Your moſt obliged, and moſt obedient humble Servant,*

ROBERT WALLACE JOHNSON.

## LETTER III.

### *From* DR. JOHN REDMAN.

*Philadelphia, January* 30, 1776.

SIR,

I AM now to acknowledge the receipt of your agreeable favour, and alſo your valuable preſent of inſtruments, in September laſt, having lain in Mr. Bevan's hands for ſome months; which delay was owing to ſeveral Captains refuſing to take them, leſt it ſhould be a breach of the non-importation agreement, not knowing the value or importance of them. And they might have continued there ſtill, if I had not engaged my friend, Captain Falconer, to bring them in his cheſt, by repreſenting to him the value of ſuch an acquiſition here, where we have ſo few that could make them exactly according to your improvements, from a figure on paper. The difficulty of obtaining ſuch ſmall matters, and making ſuitable returns, among other more weighty reaſons, makes me heartily regret the unhappy conteſt between England and America; eſpecially, as, at this time, it prevents my being able to make you any return than in words, but hope ere long, the communication will be ſo reſtored, as to allow me to do it more ſubſtantially; and 'till then I can only add my ſincere acknowledgements to the conſcious happineſs which your benevolent mind will receive, from having put it in my power to do more good to the diſtreſſed.

Your kind and generous preſent of the ſeveral obſtetric inſtruments, improved and finiſhed under your direction, yielded me the double pleaſure of enabling me and others to be more ſafely uſeful,

and alſo as a teſtimony of your regard, which enhances the value. The forceps are very neat, as well as ingenious, but I think it would extend their utility, if an inch was added to their length; as thereby they would reach higher up, which may be neceſſary in ſome caſes, without diminiſhing their uſe, in thoſe that are low and more advanced; and beſides, their joints would then be more likely to lock on the outſide of the vagina, eſpecially if the addition was wholly in the blades: But I ſuppoſe, your reaſons for not having them longer, were the ſame as Dr. Smellie's, who ſays, in his chapter on fillets and forceps, that he had contrived a ſimilar pair (being curved on the ſides) but longer, to take better hold of the head when reſting on the pubes, than he could do with the ſtraight ones, eſpecially if the ſacrum projected, as in that caſe he could not paſs the ſtrait ones far enough back at the perineum, to paſs their points before and above that projection; but, at the ſame time ſtrongly adviſes not to uſe them, except the head be ſmall, leſt by too great force the mother be ſo injured, as to endanger her life. But then, I wonder he did not ſee their uſe and preference, when the head was lower down, ſo as to adopt them in his ſmalleſt ſize, which is exactly of the ſame length with yours; a pair of which I brought with me by his directions, but never uſed but once, having always found his longeſt, (which are twelve inches) not at all too long, in moſt caſes where abſolutely neceſſary to uſe the forceps; from whence it is, that I draw my concluſion aforementioned.

I am much pleaſed with your embryulcus, as a contrivance more eaſy and ſafe to be applied for the purpoſe than the crotchet, eſpecially for young beginners, in whoſe hands the latter is always dangerous. It will anſwer in moſt caſes, but I have had ſome where I think it would not; having acquired all the force of the crotchet, owing to the narrowneſs of the pelvis, &c. but that does

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not diminiſh its utility, where it will anſwer; and it is certainly ſafer to try it firſt.

You obſerve, that it is probable, I have ſeen and read moſt of the authors on this ſubject and others connected with it, which I believe I have, as Denman, Leake, Hulme, and White, and particularly the laſt with great pleaſure, as being on a ſubject equally neceſſary as important, to be ſo particularly diſcuſſed, and which he has executed better than was ever done before. But I can without flattery declare, that I think, as to the practical part, your chapter on that ſubject is equal to any, and ſuperior to moſt of them. I had never ſeen Pugh's treatiſe, till I met with it mentioned in your's, and then found it in one of our book ſhops, where it had lain for ſeveral years, without being enquired for. I think him candid, but too general to be ſo uſeful to young ſtudents as Smellie, eſpecially on turning: but I believe his principal deſign was to prevent opening the head (too cuſtomary before) and to recommend his long curved forceps (being fourteen inches) ſomewhat ſimilar to your's, but not near ſo compleat, eſpecially in not having the inverted curve on the underſide, by which the perineum is ſaved from danger, &c. It may be a good vade mecum, with ſome obſervations of one's own in the margin; and the hint of an aſſiſtant preſſing above the pubes, on the head of the child, when it ſticks after the body is delivered, is a good one: but I fear what he ſays on the uſe of the long forceps, when the head is above the brim of the pelvis (unleſs very ſmall) may lead young practitioners to be too bold, and injure the mother, more than will compenſate for merely delivering the child head foremoſt; and therefore not juſtifiable, unleſs where turning cannot be done, or will not anſwer, from the bad formation of the head or pelvis; and then indeed it may be right to try it, before opening the head, if the child be alive. I wiſh he had given the caution which

Smellie

Smellie does (when he mentions the uſe of the long curved forceps in like caſes) reſpecting the danger to the mother; for however ſafe they might be in his old experienced hands, I am perſuaded they are not ſo in young ones, without being more on their guard than they generally are; till an experience, painful to humanity, has taught them to be ſo. And therefore, our good old inſtructor, with great reaſon and ſolemnity, uſed to charge us not even to attempt to fix his longeſt ſtrait forceps, till the head was well advanced into the pelvis; by which I doubt not many lives have been ſaved, which otherwiſe might have been loſt. I have alſo, with you, found the head ſometimes ſo aukwardly ſituated, that I could not with eaſe or ſafety fix the forceps, and ſuppoſe it was owing to its coming diagonally, as Smellie terms it; or the projection of the ſacrum prevented their points from coming exactly right; or perhaps both. The former I am ſure was once the caſe with me in the beginning of practice, when I was obliged to deliver in haſte, and found the point of the forceps had ſunk into the forehead near the temple.—I think I could have managed it better ſince. This, as well as ſome other inſtances, has ever made me think, that Smellie's forceps would have been better, if their points had been a little wider, and thinner or flatter, as your's are, whereby they would be leſs liable to ſlip off and foil the operator, as you mention they did with you.

I really congratulate you on your retirement from the hurry of buſineſs, which I do not wonder at, as it muſt have been very fatiguing.—May you enjoy much health and long life, and be bleſt with a comfortable old age, and finiſh your courſe with that joy and peace, which is the reward of virtue and true ufefulneſs; and at the final cloſe thereof, be admitted to that ſtate of bliſs, where the good man reſts from his labours, and his works do follow him. And may the Beneficent Creator of the Univerſe, who wiſely diſ-

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poſes of all events for the general good, grant, that a ſpeedy, honourable, and laſting reconciliation may take place between Great Britain and America; that ſo we and our poſterity may henceforth walk as brethren, and purſue the affairs of this ſhort and tranſitory life as heretofore, in an amicable union of hearts and intereſts; and no more have occaſion to fall out by the way, even to the end of time! Thus wiſhes, yea, thus earneſtly prays,

*Dear Sir,*

*Your very reſpectful and affectionate humble Servant,*

JOHN REDMAN.

FINIS.

MVSEVM
BRITAN
NICVM

## DIRECTIONS to the BINDER.

Plates I. II. and III. to face Page 1. Plate IV. to face Page 55. Plate V. to face Page 77. Plate VI. to face Page 269. Plate VII. to face Page 291. Plate VIII. to face Page 293. Plate IX. to face Page 417. And Plate X. to face Page 439.